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A study to determine the suitability of utilizing the audio modular instructional approach as one alternative preservice training technique for presenting selected concepts and skills to students of school administration.

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A Study to Determine the Suitability of Utilizing the Audio Modular Instructional Approach as One Alternative Pre-service Training Technique for Presenting Selected Concepts and Skills to Students of School Administration. (June, 1972)

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The purposes of the study were:

1. Develop two audio modular instructional units to be used specifically by the graduate students who were enrolled in courses in the Center for Leadership and Administration, at the School of Education, University of Massachusetts.

2. Design a format and procedures for field-testing the developed audio modular instructional units.

3. Assess the suitability of utilizing the two audio modular instructional units for presenting the selected concepts and skills to students of School Administration, who are enrolled in the graduate program in the School of Education, University

of Massachusetts; and to secure student evaluation for the purpose of improving the form, content, and use of the audio modular instructional units.

4. Develop recommendations focused on: a) the further development and use of audio modular instructional units; and b) further assessment of the audio modular instructional approach.

The study was exploratory in nature. It was an initial attempt to determine the suitability of utilizing audio modular instructional units for the pre-service training of school administrators.

The term suitability was defined by the investigator as: the usefulness of the audio modular instructional approach as determined by the data obtained through the use of a variety of data gathering procedures utilizing both subjective and objective assessment approaches. The criteria utilized were:

1. Participants' interest in the experience, and their motivation as a result of the experience.

2. The worth of the experience as compared to alternative experiences as perceived by the participants.

3. The connotative meaning of the experience, as compared to the connotative experience by which the participant could achieve the learning objectives.

4. The cognitive change that takes place in the individual as a result of participating in the experience.

5. The potential for further development of learning experiences utilizing the same instructional approach.

6. The expenditure of time and money used in the development and production of the learning experience.

The goal of this study was to design and field test a type of "linkage" that could help close the gap between the expertise which lies at the University of Massachusetts, School of Education, and the School of Education Trainee who is striving to become the administrative generalist most in demand by the consumer. Also, to suggest a method other institutions could adopt.

A STUDY TO DETERMINE THE SUITABILITY OF UTILIZING THE AUDIO MODULAR INSTRUCTIONAL APPROACH AS ONE ALTERNATIVE PRE-SERVICE TRAINING TECHNIQUE FOR PRESENTING SELECTED CONCEPTS AND SKILLS TO STUDENTS OF SCHOOL ADMINISTRATION

A Dissertation Presented

By

LEE THOMAS PETERSON

Submitted to the Graduate School of the
University of Massachusetts in
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June, 1972

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June, 1972

DEDICATION

To my wife, Ronda, and our three children, Douglas, Lisa, and Jeffrey; whose patience and understanding during the writing of this document have been most rewarding.

ACKNOWLEDGMENT

A study of this nature has only been possible through the efforts of many people. A sincere appreciation is extended to the author's committee members, Dr. David S. Flight and Dr. William V. Fanslow, whose critical analysis and advice over the past two years has been invaluable. To committee member Dr. Mark Rossman must go a very special thanks for the role he played in the final stages of the document. To Dr. Ken Blanchard, who helped conceptualize the modular instructional units, this author extends deep appreciation.

It is with great admiration this author salutes his committee chairman, Dr. Roger H. Peck. Through his leadership this document became a reality; through his guidance, there have been many learning experiences; and through his understanding there has grown a friendship that will continue to nourish for years to come.

To Mrs. Kanal, who typed the final document, goes my warmest appreciation for her concern and interest.

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CHAPTER I

INTRODUCTION

Higher education appears to be in a dilemma today. At the same time the university budgets are being cut and carefully scrutinized, the public is demanding that the institutions of higher education release their human expertise to better assist the public in attempting to solve many of the nation's social and technological problems. It is a known fact that graduate education programs in general are more expensive to operate than undergraduate education programs. One of the reasons for this expense is the perceived need for more human professional resources for the students in graduate programs. It seems a little ironic to the investigator that the more mature a student becomes, the more professional assistance is provided him in his formal educational program. This problem seems to have special ramifications as it relates to graduate education programs which are developed for the purpose of training the educational administrator.

The Utilization of Resources for the Pre-service Training of Educational Administrators

As one relates to the graduate education program for training educational administrators, several paradoxes seem to appear. Given the assumption that one of the major tasks of the educational administrator is that of instructional leadership, it appears that the effective

utilization of resources for the training of school administrators should be of a major concern of those people responsible for developing the training programs for the school administrators.

It is apparent to this investigator that a diet of small group seminars, the writing of position papers, "show and tell sessions" by outside speakers, and possibly an internship toward the end of his program is a limited experience for an individual who is to go out into the schools to assist teachers in developing alternative learning experiences for students. It also appears to be an expensive and ineffective use of the professional resources available in the graduate education program.

Given the above concerns, methods should be developed to resolve two issues concerning a) a more effective utilization of the professional human resources at the university for the pre-service training of school administrators; and b) providing for alternative learning approaches by which the individual in the pre-service education program for educational administration is able to gain the perceived skills and knowledge needed.

Center for Leadership
and Administration

A group of professors and students in the Center for Leadership and Administration, at the School of Education, in the University of

Massachusetts are in the process of developing and assessing various alternative learning approaches which could eventually be utilized as components of a Resource Bank which might be developed for the purpose of serving professors and students of educational administration. One of the components which appears to have some promise has been given the name of the "Audio Modular Instruction Approach."

The Audio Modular Instruction Approach

A study was conducted by Dr. Ernest D. Herriman, its purpose was to determine the suitability of utilizing the audio modular instructional approach as an alternative in-service training technique for presenting selected concepts and skills to school administrators.[1] In his study, Herriman defined an audio modular instructional unit as:

> A learning activity package including an audio tape containing instructions and a narration emphasizing, through a series of logical and sequential experiences, a single specific concept. It is comprised of: 1) written performance objectives, 2) an audio tape, 3) a guidebook and selected references.[2]

In his study, Herriman field-tested three different audio modular

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[1] E. D. Herriman, "A Pilot Study of the Suitability of the Audio Modular Instructional Approach for the Continuing Education of School Administrators" (unpublished Ed. D. dissertation, University of Massachusetts, 1971), p. 10.

instructional units.[3] The field testing involved 59 participants, and was conducted in four states. The majority of the participants in the study were practicing school administrators. Among the conclusions reached through an analysis of the data from the study, Herriman found that

> 1. The audio modular instructional approach provides an experience for an individual which is perceived of as interesting and exciting.[4]
>
> 2. The audio modular instructional approach is perceived of as being as good as or better than other forms of inservice training for administrators, for learning certain concepts and skills.[5]
>
> 3. The participants perceived that a major strength of the audio modular instructional approach was the ease and convenience with which the materials can be used.[6]

One of the recommendations which Herriman made as a result of the study was that the audio modular instructional approach should be considered for use in some aspects of the pre-service program for

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[2] Ibid., p. 12.

[3] Ibid., p. 100.

[4] Ibid., p. 198.

[5] Ibid., p. 198.

[6] Ibid., p. 198.

school administrators.[7]

The Herriman study was the stimulation for the present study. It appeared to this investigator that the audio modular instructional approach could provide an alternative framework whereby professional resources at the university could be more effectively utilized for the pre-service training of school administrators. This approach could also provide an alternative learning experience for the trainee as he attempts to gain certain skills and knowledge in school administration. It was assumed that if professors in the university could be encouraged to prepare packet presentations dealing with either course material or other areas of their interest and expertise, these packets might reach students who would not otherwise avail themselves of these class experiences. It is also possible that after going through a particular packet presentation, a student might perceive a need for greater involvement in that area.

Another possibility for the utilization of the audio modular instructional approach would be an eventual more effective utilization of the professor's time. Much of what a professor does in a classroom situation might be accomplished through the use of the audio modular instructional units. The actual presence of the professor as

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[7] Ibid., p. 200.

far as contact with students would take on a different form than it has in the past.

Although the audio modular instructional units, as conceived for the present study, are geared mainly for providing an alternative training technique for students in a pre-service education program for school administrators at a specific university, the use of the units as an in-service training device is also a possibility. As professors are encouraged more and more to develop methods of providing service to the community outside the university campus, the audio modular instructional approach could possibly play an important role in this service component.

The investigator realizes that all of the above questions could not be answered in the confines of one single study. The present study, therefore, is exploratory in nature. It is an initial attempt to discover answers to some of the questions which have been discussed above.

Purpose of the Study

The major objective of the study was to determine the suitability of utilizing the audio modular instructional approach as one alternative pre-service training technique for presenting selected concepts and skills to students of school administration who are enrolled in the

graduate program in the School of Education at the University of Massachusetts. The purposes of the study were:

1. Develop two audio modular instructional units to be used specifically by the graduate students who are enrolled in courses in the Center for Leadership and Administration, at the School of Education, University of Massachusetts. These units were developed by the investigator, with the assistance of one of the Professors of Educational Administration in the Center for Leadership and Administration.[8] The two units were sequential in nature, the terminal objective for the second unit being an application, through simulated situations, of concepts and generalizations pertaining to "Leader Behavior" and "Leader Style Adaptability." These are concepts which the Professor normally presents during his initial class sessions.

2. Design a format and procedures for field-testing the developed audio modular instructional units.

3. Assess the suitability[9] of utilizing the two audio modular in-

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[8]The professor of Educational Administration assisting in the development of the audio modular instructional units was Dr. Kenneth H. Blanchard.

[9]The criteria developed for defining suitability are given in the section of this report under the heading of Definition of Terms; see pages 8-14.

structional units for presenting the selected concepts and skills to students of school administration, who are enrolled in the graduate program in the School of Education, University of Massachusetts; and to secure student evaluations for the purpose of improving the form, content, and use of the audio modular instructional units.

4. Develop recommendations focused on a) the further development and use of audio modular instructional units; and b) further assessment of the audio modular instructional approach.

Definition of Terms

The following terms are defined operationally as used in this study.

Administration - An individual's hierarchical position within an organization charged with the responsibility of planning and coordinating the activities within that organization. For the purpose of this study, the term administration refers to administration within a school setting.

Administrative Trainee - An individual going through the training phase of a graduate education program in educational administration. All trainees referred to in this study were enrolled in the Center for Leadership and Administration in the

School of Education, University of Massachusetts, at the time the study was conducted.

Attitude - The degree of positive or negative feeling associated with some psychological object.

Audio Modular Instructional Unit - A learning activity package including an audio tape and a guidebook. The unit emphasizes the learning of a single concept, through a series of logical and sequential experiences. The combination of audio tape and guidebook present the following: a) instructions on how to use the modular unit; b) the performance objectives which the individual should be able to achieve as a result of participating in the unit; c) a narration, with accompanying charts and diagrams, which presents information to the participant; d) role playing, simulation, and other types of exercises which allows the participant to apply parts of the information which has been presented in the narration; e) self-evaluation instruments; and f) selected references. For the purpose of the present study the following audio modular instructional units were developed:

"Leader Style Adaptability" Modular Unit - an audio modular instructional unit, the second in a series of two sequential units. The terminal objective of this unit, and

consequently for the series of the two units is to be able to "Successfully apply the 'Life Cycle Theory' to simulated situations, showing that the appropriate leadership style depends on the maturity of the individual, i.e. parent-child relationship; teacher-student relationship; and administrator-faculty relationship."

"Leader Behavior" Modular Unit - an audio modular instructional unit, the first in a series of two sequential units. This unit is a prerequisite to the "Leader Style Adaptability" Modular Unit; and, it provides for the achievement of the majority of enroute objectives which are perceived to be necessary to achieve the terminal objective for the "Leader Style Adaptability" Modular Unit.

Audio modular instructional approach - a learning methodology in which the individual participates in one or more audio modular instructional units for the purpose of achieving the performance objectives specified in the unit. For the purpose of the present study, the units must be developed by an instructor in a graduate program in educational administration, in which the participant is enrolled as a student.

Center for Leadership and Administration - a department (or center) within the School of Education, University of Massachu-

setts, focusing on the training of school administrators. Students currently enrolled in the Center are graduate students working toward an advanced formal degree in Educational Administration.

Pre-service education programs for school administrators - programs (course work) which are designed for persons currently enrolled in a graduate educational program leading to an advanced formal degree in the area of educational administration.

School Administrator - an individual charged with administrative responsibilities. For the purpose of this study the term school administrator was used to encompass elementary and secondary principals, supervisors, and central office personnel, including superintendents, assistant superintendents, and directors.

Suitability - the usefulness of the audio modular instructional approach as determined by the data obtained through the use of a variety of data gathering procedures utilizing both subjective and objective assessment approaches. The criteria utilized were:

Participants' interest in the experience, and their motivation as a result of the experience -- the degree to which

the experience with the audio modular instructional unit was interesting and of value to the participant; the degree to which the participants are stimulated to elect to participate in additional audio modular instructional units; and the degree to which the participants are excited about recommending to other persons that they should participate in the audio modular instructional unit.

The worth of the experience as compared to alternative experiences as perceived by the participants -- the order of ranking for preference for the audio modular instructional unit as compared to other specific forms of pre-service educational programs for school administrators.

The connotative meaning of the experience, as compared to the connotative meaning of a concept which signifies any other type of experience by which the participant could achieve the learning objectives -- the degree to which the connotative meaning of the concept, "Audio Modular Instruction as One Alternative Approach for Pre-service Education for School Administrators" elicits from the participant a positive rating for a) the factors of potency, evaluation, and activity; and b) the polar traits signifying the degree to which the concept is successful, meaningful, useful, promising,

thoughtful, and interesting; in addition to the degree to which the ratings on these previously mentioned factors and traits compare with the ratings on the same factors and traits as they relate to the connotative meaning of the concept, "Pre-service Educational Programs for Administrators in which You Have Participated (Excluding the Audio Modular Instructional Approach, but Including Course Work and Other Learning Experiences)."

The cognitive change that takes place in the individual as a result of participating in the experience -- the degree to which the participants, after completing the unit, achieve the performance objectives which are stated at the beginning of the audio modular instructional unit.

The potential for further development of learning experiences utilizing the same instructional approach -- the perceptions of the individuals, who have participated in the audio modular instructional units, concerning a) their desire to participate in any additional audio modular instructional units; b) the conditions under which they would participate in additional units; c) the value of developing any more audio modular instructional units; d) the topics which could be adapted for presentation through the use of the audio modular

instructional approach; and e) the types of skills which could be learned through the use of the audio modular instructional approach.

The expenditure of time and money used in the development and production of the learning experience -- the amount of time involved in developing the audio modular instructional unit; and the monetary cost of producing the unit.

Limitations of the Study

The following limitations were placed upon the study:

1. The purpose of this study was to determine the suitability of utilizing the audio modular instructional approach for the pre-service training of school administrators. The criteria upon which the term "suitability" were established is limited to the operational definition for suitability as it is used in this study. Consequently, the conclusions and recommendations for the study are limited to this definition of suitability.

2. This study was designed to test the suitability of an alternative approach to pre-service training of school administrators at the School of Education, University of Massachusetts. The flexibility in student programming in this institution is probably somewhat unique.

Any attempt to generalize on the findings from the data from this study should take this factor into consideration.

3. The design which was used in the study for determining the cognitive change effected as a result of participating in the audio modular instructional unit was the posttest-only nonequivalent control group design. Although great care was exercised in attempting to insure the best possible matching of the control group (individuals who did not participate in the modular units), and the experimental group (individuals who participated in the modular units), the two groups were not equally matched on the identified criteria. Consequently, there is uncertainty as to whether the experimental group and the control group would have been similar in relation to their level of performance of the objectives before the experience with the audio modular instructional unit. Consequently, caution must be taken when viewing the findings focused on the gain in achievement relative to the performance objectives.

Summary of the Procedures Used in the Study

The study was exploratory in nature. It was an initial attempt to determine the suitability of utilizing audio modular instructional units for the pre-service training of school administrators. The study in-

corporated a field study technique, utilizing several forms of assessment procedures. In the following sections, the procedures used in the study are briefly described: a) the procedures used in the field testing of the units; b) the assessment procedures used to determine the suitability of the units; and c) other assessment procedures which were used in the study.

Procedures Used in the Field Testing

The study population for the present study consisted of three separate groups chosen from the graduate students in the Center for Leadership and Administration at the School of Education, University of Massachusetts. The first group, "Group A," consisted of twenty-two persons, who individually or in small groups of two or four, participated in both of the audio modular instructional units. The second group, "Group B," consisted of twenty-two persons. This group received the same information that was given to "Group A," the only variation being that "Group B" was presented the information in lecture-form, through the use of a "live" presentation. Consequently, "Group B" had the opportunity to ask questions, and to interact on the information being presented. The third group, "Group C," which consisted of twenty-two persons, did not participate in either the audio modular instructional units, or the "live" presentations of the mater-

ial. The members of this group had never encountered the information which was presented in the audio modular instructional units.

Assessment Procedures Used to Determine the Suitability of the Units

The assessment procedures used in the study were based on the criteria established in the definition for suitability, as this term was used operationally in the present study. These criteria, and the assessment procedures used for each criteria, are summarized in the following sections.

The assessment procedures used to determine the participants' interest in the experience, and their motivation as a result of the experience. Each of the participants in "Group A" was asked to react to a series of "closed" questions focused on his attitude toward the audio modular instructional units, in which they had participated. These questions were presented on a written questionnaire, and were administered to the participant immediately upon completion of the units. In addition to the "closed" questions, the participants were asked to react to a number of "open-ended" questions focused on their attitudes toward their experience with the units. The purpose for the "open-ended" questions was to supplement the data provided through the use of the "closed" questions. The data from the "closed"

questions were presented in the form of number and percentage of responses made for each level of the Likert-Type response pattern. The "open-ended" questions were categorized, and presented in the form of the number and percentage of responses made for each category.

The assessment procedures used to determine the worth of the experience as compared to alternative experiences, as perceived by the participants. The participants in "Group A" were asked to rank-order a list of six different pre-service approaches. This rank-ordering process was in relation to the participant's preference as to which instructional approach he would choose to experience. Within this list was included the audio modular instructional approach. The data produced were analyzed in two different ways. The first was to determine the number of times each approach was assigned a certain rank value. The second approach was to weigh the responses, and determine the weighted mean score for each pre-service approach listed.

The assessment procedures used to determine the connotative meaning of the experience, as compared to the connotative meaning of a concept which signifies any other type of experience by which the participant could achieve the same learning objective. The participants in "Group A" were asked to react to two Semantic Differential

Scales. On the first Scale, the participants reacted to the concept, "Audio Modular Instruction as one Alternative Approach to Pre-service Education for School Administrators." On the second Scale, the participant reacted to the concept, "Pre-service Educational Programs for Administrators in Which You Have Participated (excluding the audio modular instructional approach, but including course work and other learning experiences)." The mean polarity scores, for each of the two concepts, were determined for the factors of evaluation, potency, and activity. The mean polarity scores for a number of individual polar traits were also calculated. The difference in the mean polarity scores for the two concepts were subjected to a statistical analysis of variance to determine if the differences in these scores reached a statistical level of significance. This statistical analysis was calculated for each of the three factors, and for each of the individual polar traits for which mean polarity scores were determined.

The assessment procedures used to determine the cognitive changes that took place in the individuals as a result of participating in the experience. The posttest-only nonequivalent control group quasi-experimental design was used in an attempt to determine the cognitive changes which may have occurred as a result of participating in the audio modular instructional units. An achievement test,

based on the performance objectives for the two units, was constructed during the study. All the members in "Group A," "Group B," and "Group C" were administered copies of the same achievement test. The mean score for each group was calculated separately. The difference in the mean scores among the three groups was subjected to a statistical analysis of variance to determine if the difference in the mean scores reached a statistical level of significance.

The assessment procedures to determine the potential for further development of learning experiences utilizing the same instructional approach. The participants in "Group A" were asked to react to a number of "open-ended" questions presented on a written questionnaire. These questions focused on a) the participant's desire to participate in any additional audio modular instructional units; b) the conditions under which they would participate in additional units; c) the value of developing any more audio modular instructional units; d) the topics which could be adapted for presentation through the use of the audio modular instructional approach; and e) the types of skills which could be learned through the use of the audio modular instructional approach. The data from these questions were categorized, and presented in the form of the number and percentage of responses made for each category.

The procedures used for determining the expenditure of time and

money used in the development and production of the learning experience. In an attempt to attach a cost factor to each module that was produced, the investigator kept an accurate account of the "dollar cost" for the production of each module. The cost factor for each module was based on a per unit cost of producing ten copies of each of two audio modular instructional units. The factor of "time spent" in the development and production of the audio modular instructional units will be somewhat less accurate. The investigator can produce only a close estimate of the time element since overlapping agendas often distracted many attempts to monitor the time factor.

Other Assessment
Procedures Used

In addition to the assessment procedures used in the study which related directly to the criteria established for the term "suitability", other procedures were used to obtain additional information about the audio modular instructional units. The procedures included a) "open-ended" questions on a written questionnairs administered to "Group A", the purpose of which were to determine the major strengths and weaknesses of the audio modular instructional units; and the changes which should be made in the units; b) Semantic Differential Scales administered to "Group B" to determine their attitude toward the classroom presentation; and c) personal interviews conducted by the

investigator with the participants in "Group A," and "Group B" to determine their perceptions of the experience during the field study. The investigator also made notes from his observations of the sessions in which the individuals in "Group A" were participating in the audio modular instructional units. The data from these procedures were analyzed, and these findings were considered in the development of the final conclusions and recommendations for the study.

Significance of the Study

Innovations in a social system are more helpful when shared with others who find themselves facing similar problems. It has been pointed out by Fox and Lippitt[10] that the channels of communication which could be used to share successful innovations in schools are so poorly developed in most school situations that little sharing takes place. It should be a major concern of the administrative trainee just what is taking place in universities that is related to his field of study. A second major concern of the trainee should be his concern for what is happening in his own field that may escape his program of study because he was unaware of it, or too tightly scheduled to take

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[10]Robert S. Fox and Lippitt, "The Innovation of Classroom Mental Health Practices," in Innovations in Education, ed. by Mathew Miles (New York: Teachers College, Columbia University, 1964).

advantage of it.

The lag between the reporting of well-tested innovational practices and their wide-spread implementation in the educational programs of schools was called a "long-standing problem of major proportion," by Richland.[11] This problem is found at all levels of training in the field of education.

Authors such as Baird,[12] Burchinal,[13] and Gagne[14] have asked for a nationwide dissemination program. The increasingly complex role of the school administrator demands a highly systematized form of communication which requires little time committment on the part of the administrator, yet provides a means of keeping abreast of the changing times in today's society.

The goal of this study was to design, and field test a type of "linkage" that could help close the gap between the expertise which lies at

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[11]Malcolm Richland, Traveling Seminar and Conference for the Implementation of Educational Innovations (Santa Monica: System Development Corporation, 1965).

[12]Karen Baird, A Pilot Project of Dissemination of Information to Higher Education Personnel (Detroit: Wayne State University, 1965).

[13]Lee G. Burchinal, Articulation of Resources for Research Utilization (Washington, D. C.: U.S. Office of Education, 1967).

[14]Philip H. DuBois, ed., Psychological Research in Adult Learning (St. Louis: Washington University Press, 1968).

the University of Massachusetts, School of Education, and the School of Education Trainee who is striving to become the administrative generalist most in demand by the consumer. Also, to suggest a method other institutions could adopt.

Organization of the Dissertation

Chapter I consists of the problem, its significant aspects, the general design of the study, the limitations and assumptions, and the suitability factor which becomes the justification for the entire study. Chapter II presents a review of the literature as related to pre-service training of school administrators. Other aspects that are addressed in the literature review are: early phases and trends on school administration, instructional strategies for change, considerations for change, educational institutions concerned for change, the design of a resource bank attempting to smooth the way for change, the use of the audio modular instructional units as an alternative for presenting selected topics, and finally, the method used for assessing the suitability of the audio modular instructional units. Chapter III presents a description of the background, development, composition, and field testing of the modular units. Also included in this Chapter is a description of the packets themselves. Chapter IV presents a detailed description of the methodology used to conduct the

analysis. The instruments used in the study are also presented. Chapter V is a comparative analysis of the data collected during the field testing, follow-up data on the use of the packets, and an analysis of the results of the semantic differential and the results it implies. Chapter VI presents the summary, conclusions, and recommendations suggested by the data collected in the dissertation.

CHAPTER II

REVIEW OF RELATED RESEARCH AND LITERATURE

The present study concerns itself with determining the suitability of using the audio modular instructional approach for pre-service training of school administrators. Within this chapter will be presented 1) the evolution of the "50 year accountability cycle", 2) the historical qualities, needs and purposes of an educational administrator, the influence and importance of the study of related disciplines, and past and present in-service training approaches, 3) the evolution of specific aspects of the Center for Leadership and Administration within the School of Education of the University of Massachusetts, and 4) problems associated with assessment techniques.

The Emerging Educational Administrator

As this section of Chapter II will focus on the emergence of the educational administrator and his leadership style, it is necessary to define the author's perception of leadership and administration prior to dealing with them in depth.

The term "leadership," when referred to in this section, is defined as:

> .....the initiation of a new structure or procedure for accomplishing an organization's goals and objectives or for changing an organization's goals and objectives.....

> the leader is concerned with initiating changes in established structures, procedures, or goals; he is disruptive of the existing state of affairs.[1]

To ensure clarity of terminology, "administration" is defined as:

> .....the utilization of existing structures or procedures to achieve an organizational goal or objective.....the administrator is concerned with maintaining, rather than changing, established structures, procedures, or goals. Thus, the administrator may be viewed as a stabilizing force.[2]

Educational administration is generally concerned with the overall direction and support of the schools. It includes the leadership of the school principal, the specialized skills of the business manager, curriculum coordinator, and other staff specialists, all operating under the aegis of the superintendent.

The concept of administration as a profession evolved with the expansion of the educational enterprise during the late nineteenth century. Initially, administration and the administrative duties were shared at the local level by the principal-teacher and a particularly forceful

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[1] James M. Lipham, "Leadership and Administration," Behavioral Science and Educational Administration, Sixty-third Yearbook of the National Society for the Study of Education, Part II (Chicago: University of Chicago Press, 1964), p. 122.

[2] Ibid., p. 122.

school trustee. This was usually done with minimal assistance and supervision from county and state officials.

Management came of age following the Industrial Revolution. However, this was long before these administrative skills were required by the military, the church, and society.[3]

> Administration came into being with the first organized activity; its growth can be explained largely by the increased size, number, and complexity of organizations, and by the increase in the variety, speed, and urgency of the activities within the organization. Increased administration, due to organizational demands, in turn contributes to the complexity of the organization and demands even more administration. If, as has been suggested, administration is increased for its own sake, which is possible, it can create a complexity that appears to demand even additional administrative activity.[4]

In the 1880's and 1890's educational administration was relatively simple. There were state superintendents in all 38 states. In 21 states they were elected by popular vote. These superintendents distributed state school funds and took responsibility for encouraging the support and improvement of public education. The superintendent was assisted by state boards of education in 24 states; in 12 states the

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[3]Willard R. Lane, Ronald G. Corwin, and William G. Monahan, Foundations of Educational Administration: A Behavioral Analysis (New York: The Macmillan Company, 1967), p. 4.

[4]John Walton, Administration and Policy-making in Education (Baltimore: The John Hopkins Press, 1959), p. 36.

members of the boards were elected primarily from the ranks of professional teachers.[5]

Concomitant with people looking to education as a panacea for the "ills" of our country there emerged an equal number of authorities to provide varying images of what the school should offer.

By 1900, Americans were growing increasingly aware of the ideals of the efficiency movement; first as applied to factory management, then government and social work to support progressive reforms, and finally, the schools. These ideals contributed to the new image of society based upon highly organized, smoothly working corporate structures. Prominent schoolmen were able to keep apprised of the changing demands and values of the business community through membership in the local community clubs.

The volume "School Reports and School Efficiency" (1908), by David Snedden and William H. Allen, argued forcefully and convincingly in favor of the schools' borrowing the methods of business and applying them to social efficiency purposes, or human bookkeeping.

Allen constantly spoke of efficiency in government, social work and education. He made superintendents responsible for gathering

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[5] Walter H. Drost, "Administration, Educational: History," The Encyclopedia of Education, ed. by Lee C. Deighton (Volume I; New York: MacMillan Company, 1971), p. 68.

the facts and maintaining the records necessary to measure school efficiency. At his instigation a survey of New York City schools assessing dollar expenditures vs results was conducted in 1911. This was the first of many such surveys throughout the country dealing with accountability.

A short time after the New York Survey was done, Frank Spaulding, superintendent of schools in Newton, Massachusetts, was confronted with questions concerning relative costs of courses given in the technical high school as opposed to those identical courses offered in the new industrial school. Acknowledging that products of education could not be measured, he focused on per pupil costs to determine the "educational value" of a subject. Business efficiency, or more recently, accountability in public education was born.

In Supervision of the City Schools (1913), the 12th yearbook of the National Society for the Study of Education, Bobbitt called upon society to tell the schools what they wanted in order to determine the specifications of the "educational product."

In his book School Management (1903), Dutton attacked business efficiency as inappropriate to the school. He felt that standards of business efficiency demanded a uniformity which was stultifying to an educational climate of change. To Dutton, the school existed to create a better social life. To accomplish this the teacher had to be

a student of industrial, commercial, and social life, earnestly cooperating in all efforts for civic progress. In 1907, he published the first textbook on school administration—The Administration of Public Education in the United States (1908). This volume replaced Allen's New York Survey Report (Hanus 1913) as the classic in the newly emerging field of educational administration.

Dutton's "social efficiency" doctrine suggested that the primary agency of social control be the school administrator. It suggested that more meaningful programs be developed to influence students' lives. Dutton also suggested that to build an effective school program required an accurate diagnosis of the ingredients of success. Often it required diagnosing society itself by using the techniques of job analysis. The social efficiency doctrine promised to provide the individual with everything he would need for optimum fulfillment of his role in society.

In response to the social efficiency doctrine, the Progressive Education movement was organized in 1919 by an English teacher, Stanwood Cobb. The PEA drew its membership largely from among professional women, clubwomen, and parents supporting various experimental schools. This concerned group shared the common purpose of reforming the whole educational enterprise by precept and example.[6]

[6]Ibid., p. 74.

In the progressive school the teacher was neither manipulated by nor a manipulator of the child. Rather, he enjoyed the dignity of a creative scholar sharing the thrill of discovery with his students. In this relationship the administrator had a very different role. Most often he saw himself first as a teacher for whom administration was an added burden.

Schooled in social efficiency and infected with heady doctrines of progressive education, the new men of the late 1920's tried to mold a democratic, socially concerned citizenry. When the disillusionment and the economic pressures of the depression were being felt, these men responded with the doctrine of social reconstruction.[7]

George Counts presented the challenge of social reconstruction in a 1932 publication entitled, Dare the School to Build a New Social Order?

In 1929, as a member of the Columbia faculty, Jesse Newlon lauded school administrators for their high level of honesty and business efficiency. This came at a time when graft and corruption were very evident in other areas of government service. He also dismissed the importance of these ideals and implied that the administrator's greatest significance was vested in his concern with the purpose of education and in his influence for creative change.

[7] Ibid., p. 77.

Newlon maintained that administrators should raise themselves to the level of statesmen. Further, they should turn from the mere techniques of management to the philosophic questions of purpose thereby giving direction to procedure. Newlon did not see the goals of education as emerging from society itself. Rather, he saw society becoming what the school administrator wished to make it. He was drawing upon the newly discovered skills of group dynamics by involving directed group discussion leading to a positive action.

It is ironic to find that these issues are as current and elusive today as they were fifty years ago. Then, as now, the conflict of goals and philosophies as the underlying factor for dissention and disagreement among educators is apparent.

To deal with this complexity, the administrator must be prepared to face change. When necessary he must be able to create change. Wesley Meierhenry addressed the problem when he stated:

> The reluctance to change on the part of educators and school systems represents a paradoxical situation. Teaching and learning consist of trying to bring about behavior changes. The purpose of education is to develop individuals who are adaptive and creative. Therefore, all the efforts of the teacher and the major purpose of the educational enterprise are to bring about planned change in the individual. Why persons who are committed to this kind of objective for all the pupils for whom they have responsibility should reject or be neutral about planned change in their own practices as teachers is a gnawing and perplexing question.[8]

John Gardner states:

> .....we are poor at problem solving that requires the revision of social structure, the renewal of institutions, the invention of new human arrangements.
>
> Not only are problems in this realm exceedingly complex, but in some cases we are rather strongly motivated not to solve them. Solving them would endanger old, familiar ways of doing things. [9]

If we are to save our schools from self destruction we must be prepared to change the structure and the social order. According to Leon Lessinger:

> A failing school, no matter how bravely "administered," is still a failing school. To get the results that parents, their representatives, and even students are rightly demanding, we must learn how to change. [10]

Lessinger further stated:

> We must learn to think of education as a complex, adaptable kind of business, not as the self-contained institutions of less demanding times, much less as the little red school-

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[8] Wesley C. Meierhenry, Media and Educational Innovation (Lincoln, Nebraska: The University of Nebraska Press, 1964), p. 440.

[9] John Gardner, No Easy Victory (New York: Harper and Row, 1968), p. 27.

[10] Leon Lessinger, Every Kid a Winner: Accountability in Education (New York: Simon and Schuster, 1970), p. 15.

house of the past.[11]

According to Meierhenry,[12] part of the problem concerning educational change can be related to the fact that schools have virtually no research and development investment.

> Innovations generally have required substantial amounts of money for research, development, and demonstration activities. The R & D investments by agricultural industries and pharmaceutical firms have been huge. In contrast, education has operated on what Jim Finn has called "the peon approach". Education has never had sufficient financial resources to much more than maintain a minimal program. Even more serious, however, is the fact that there has been practically no investment in educational research. In recent testimony given before a Congressional Committee in regard to the Elementary and Secondary Education Act, Commissioner Keppel reported that only two-fifths of 1 per cent of the total educational expenditure has been devoted to research.[13]

Meierhenry went on to say that education has no "risk" money for the promotion of new ideas. We usually do not offer an economic advantage to those who try something new in the field of education.

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[11] Ibid., p. 14.

[12] W. C. Meierhenry, "A Criterion Paper on Parameters of Education" (paper presented to the Conference on Strategies for Educational Change, Washington, D. C., Nov. 8-10, 1965), pp. 24-25.

[13] Francis Keppel, Testimony Before the Hearing of the General Subcommittee on Education of the Committee on Education and Labor House of Representatives (Eighty-Ninth Congress, First Session on H. R. 2361 and H. R. 2362, Part 1), p. 99.

Since objectives and the purpose of education is not clear, it is fairly obvious that appropriate evaluations are also difficult to determine.

The profit motive as a prime agent for change in the private sector of the economy is lacking in education. In spite of this factor, most educators still promote the idea that education is different from any other kind of institution or organization. Therefore its output cannot or should not be measured in economic terms. Therefore the need to produce a return on the investment is currently not a motivational force in the field.

According to Leon Lessinger:

> Professionalism goes hand-in-hand with accountability, with clear-cut proof of performance. In general, educators so far have rested their claim less on assured results than on their university credits, years of service, and probity in administering public funds.
>
> Our public elementary and secondary schools enroll 44 million students, employ 1.9 million teachers, and spend over $30 billion in tax funds annually. We have all kinds of measurements of where the money goes: we can pin point per-capita expenditures in any school district in the country, state how much any of them spend for construction and interest payments on borrowed money, and enumerate pupil-teacher ratios until the sun goes down. But all of these figures, useful as they are for some purposes, refer exclusively to financial input rather than educational output—for example, we do not know what the average cost of increasing a youngster's reading ability by one year is; all we know is what it costs to keep him seated for one year with a textbook and a teacher—it would make much more sense if we moved from the concept of per-pupil cost

> to the concept of learning-unit cost, and focused on the cost of skill acquisition rather than on the cost of maintaining children in school.[14]

According to Blanchard and Hersey,[15] "Many of our most critical problems are not in the world of things, but in the world of people. Man's greatest failure has been his inability to secure cooperation and understanding from others."

Additionally Blanchard and Hersey speak of four levels of change in people: (1) knowledge change, (2) attitudinal change, (3) behavior changes, and (4) group and/or organizational performance change.[16]

> Changes in knowledge are the easiest to make, followed by changes in attitudes. Attitude structure differs from knowledge structure in that they are emotionally charged in a positive or negative way. Changes in behavior are significantly more difficult and time consuming than either of the two previous levels. But the implementation of group or organizational performance change is perhaps the most difficult and time consuming. Man's destiny may in fact be dependent upon how well the behavioral sciences are able to resolve conflict through understanding and implementing change.[17]

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[14] Leon Lessinger, Every Kid a Winner: Accountability in Education (New York: Simon and Schuster, 1970), p. 11.

[15] Paul Hersey and Kenneth H. Blanchard, Management of Organizational Behavior (Englewood Cliffs, New Jersey: Prentice Hall, Inc., 1969), p. 1.

[16] Ibid., p. 2.

[17] Ibid., p. 3.

John W. Gardner in his book entitled Self-Renewal,[18] notes that corporations executives routinely call on outside lawyers, auditors, and consultants to help solve problems within their firm. In fact few firms could exist without outside help. According to Gardner:

> The remarkable range of such professional and technical services that are available, plus the flexibility of the contractual relationship, gives the modern organization a wide range of choices in shaping its own future. Within limits, top management can put its finger on almost any function within the organization and decree that henceforth that function will be performed by an outside organization on contract. For the organization that wishes to maintain the maneuverability so essential to renewal, this offers priceless opportunities.

Again the question can be asked, can the above be applied to public education? If the answer is yes, then the logical candidate for initiating such action should be the chief administrator of the program. Whether that person be the superintendent of schools, or one of his assistants, this knowledge will be invaluable when the stage has been set for change.

In a devastating statement from his book, Leon Lessinger stated:

> If one airplane in every four crashed between takeoff and landing, airline customers would be in a lynching mood; if one automobile in every four went out of control, Detroit

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[18] John Gardner, Self-Renewal (New York: Harper and Row, 1965), pp. 80-84.

> would be closed down tomorrow. Yet our schools, which are more important than airplanes or automobiles, somehow fail one youngster in four...while doing 30 billion dollars worth of (bad) business annually. To get the results which parents, taxpayers, and students are rightly demanding, we must learn the management of change: the efficiency of modern corporations can provide the key to making every kid a winner.[19]

In the past few years educators such as Kenneth B. Clark have made critical statements such as: "with the proper expectations and programs, our schools can teach every child what he needs to know." Educators have been criticized by such critics as Nat Hentoff in Our Children are Dying, John Holt's writing How Children Fail. Further examples are Herbert Kohl's 36 Children, Charles Silberman's Crisis in the Classroom, and Jonathan Kozol's Death at an Early Age.

Thus we have seen the invention of the "50 year accountability cycle." The early definitions of administration and leadership lead to Allen and the myth of "accountability". This produced the "Educational value" concept of Spaulding. From this idea emerged Dutton's school management theory of social efficiency and the progressive movement. The cycle was complete as evidenced by Gardner, Meierhenry, and Lessinger.

A good administrator is usually a skillful administrator. He

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[19]Leon Lessinger, Every Kid a Winner: Accountability in Education (New York: Simon and Schuster, 1970), cvr.

knows when and how to maximize individual potential. This skill can be learned, but only after one has acquired a broad enough base of knowledge which will allow him to look at the entire picture. The broad base referred to does not mean that the trainee is limited to educational psychology or Introduction to Educational Administration 101. Programs such as these have for too long dominated the college graduate program. Perhaps educational change should start with the colleges and universities and filter down to the public school systems. However, impetus from both ends could produce vast consequences.

John Stuart Mills wrote in the nineteenth century:

> The proper function of a University in national education is tolarably well understood. At least there is a general agreement about what a University is not:
>
> It is not a place of professional education. Universities are not intended to teach the knowledge required to fit men for some special mode of gaining their livelihood. Their object is not to make skillful lawyers, or physicians, or engineers, but capable and cultivated human beings. It is very right that there should be public facilities for the study of professions... But these things are no part of what every generation owes to the next, as that on which its civilization and worth will be principally dependent. They are needed only by a comparative few...and even those few do not require them until after their education...has been completed... Men are men before they are lawyers, or physicians, or merchants, or manufacturers; and if you will make them capable and sensible men, they will make themselves capable and sensible lawyers or physicians.
>
> What professional men should carry away with them from

> a University is not professional knowledge, but that which should direct the use of their professional knowledge, and bring the light of general culture to illuminate the technicalities of a special pursuit... And doubtless...the crown and consummation of a liberal education...is that the pupil be taught to methodize his knowledge; to look at every separate part of it in its relation to the other parts, and to the whole...observing how all knowledge is connected, how we ascend to one branch by means of another, how the higher modifies the lower and the lower helps us to understand the higher...combining the partial glimpses which he has obtained of the field of human knowledge at different points, into a general map...of the entire region.[20]

His concern was with the process of thinking, not with the vulnerable "facts" of his own day. Perhaps this emphasis only underscores one of Dewey's insights; that a product of education ought to be mastery of the scientific mode of thought. The years have not basically altered that concept, nor have they brought us much closer to an understanding of what is meant by "learning how to think."

The existence of administrative phenomena has been established, but the characteristics, relationships, and laws are obscure. The fact that this condition is more pronounced in the social than in the physical sciences accounts for some of the impatience and bewilderment of the physical scientist.

The study of educational administration in the United States has

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[20]John Stuart Mills, Mills' Essays on Literature and Society, ed. by J.B. Schneewind (New York: Collier Books, 1965), pp. 354-55.

suffered from two grievous defects: a confusion of objectives and a confusion of content.[21]

The confusion of objectives arose from a failure to observe now well understood distinctions: the distinction between science and technology, the distinction between knowledge and the application of that knowledge to everyday problems, and the distinction between a discipline and a professional field.

In any area in which we endeavor to apply human reason to human behavior and environment we find a close relationship between knowledge as a science and knowledge as the art of action. Borrowing fragments from several diverse fields of study—law, political science, social psychology, sociology, ethics, economics, business, engineering, architecture, and statistics—we find human reason as a discipline lacks an organized body of subject matter of its own. It has no theoretical structure, no well-established empirical relations. What we do have is a lack of significant data related to facts; a course in educational administration loaded with a description of practices and promising techniques, along with the ever-present personal success stories.[22]

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[21] Lee G. Burchinal, Articulation of Resources for Research Utilization (Washington, D.C.: U.S. Office of Education, 1967). p. 9.

[22] "Preparing Administrators: New Perspectives," in The Uni-

Educational administration programs need a systematic approach to a general learning program. It is necessary to possess a general understanding of the previously mentioned courses that were identified to the educational leader, but it is of greater importance to determine the relationship of these programs to that of educational administration. For example, what use would an anthropologist or a course in anthropology be to the administrator? It is not difficult to speculate on how a study of the rise and fall of the Inca Culture would promote an understanding of the cultural minorities of today.

If it can be agreed that the primary task of the school administrator is to make decisions and to execute those decisions, then a new approach to the training of educational leaders can be explored.

To make decisions, one must identify problems, research and evaluate alternatives, determine the extent and kinds of resources available, and plan accordingly. Decision-making should be a logical process.

To execute decisions the administrator must work with and through people within an organizational setting. This implies an awareness of the ways in which human motivations, needs, abilities

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versity Council for Educational Administration Newsletter, ed. by Jack M. Culbertson and Stephen P. Hencley (Columbus, Ohio: UCEA Publication, 1962), pp. 22-23.

and attitudes interplay to affect the actions of organizations. Decision-execution is a human process.

To be an effective change agent the administrator should ideally have an understanding of the total environment within which organizations operate. He should also know what effect it has on different types of organizations. This type of administrative talent can best be developed by providing administrators with appropriate social science tools with which they can attempt to understand our rapidly changing social and economic society.[23]

> . . . it behooves him to understand the human heart, to understand—if you will—the ineffable ambiguity of the human condition. But this understanding is precisely what the poet, the playwright, the short story writer, and the novelist seek to achieve. Through the eyes of these writers, we, as administrators, can freshen our insights into our own personal problems and the problems of those with whom we work.[24]

Peter Drucker, noted professor of management and industrial consultant, suggests that not only reading, but writing poetry and short stories has real value for managers.

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[23]Kenneth Blanchard, "Proposal for a Curriculum Philosophy and Framework for the Center for Leadership and Administration" (University of Massachusetts, 1970), p. 12. (Mimeographed.)

[24]Andrew W. Halpin, "Muted Language," The School Review, Spring, 1960.

> ...it can be said with little exaggeration that of the common college courses being taught today the ones most nearly "vocational" as preparation for management are the writing of poetry and short stories. For these two courses teach a man how to express himself, teach him words and their meaning and, above all, give him practice in writing.[25]

According to Carl B. Gustavson the study of history develops an historical mindedness—" 'a way of thinking,' a form of reasoning when dealing with historical materials and human problems either in the past or in the present."[26]

By virtue of his position, an administrator may have the capacity to move other people, to change the direction of their ideas, actions, and behavior. Effective administration, one hopes, involves not just movement, but movement in the appropriate direction. Edwards says

> Is the modification of attitudes a legitimate objective of the school? The answer depends on which attitudes are in question. The schools are concerned with some and not with others.
>
> An attitude is a readiness to behave according to some value. Writers in the educational literature generally do not discriminate between attitudes and values; they tend to use the terms synonymously. The difficulty is that values, as opposed to attitudes, have no necessary behavioral correlate.[27]

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[25]John J. Corson, Governance of Colleges and Universities (New York: McGraw-Hill Book Co., 1960).

[26]Carl B. Gustavson, A Preface to History (New York: McGraw-Hill Book Co., 1955).

Therefore, all administrators, in their own way, are dealing with values or in essence, with philosophy. In fact, the moment anyone asks the question, "why?" he is philosophizing. Thus exposure to the teachings of philosophy is more than appropriate in administrative training.

It is almost universally agreed that there are common elements in administration applicable in all fields. Talcott Parsons has commented on this development:

> There is a tendency in our society to consider different types of organizations as belonging in the fields allocated to different academic disciplines; thus, students of business organization are likely to be economists, those of government and military organization, political scientists, and so forth. This tendency to divide the field obscures both the importance of the common elements, and the systematic bases of the variations from one type to another.[28]

If schools were to better educate more people, they would be better able to meet the challenge of the times and the competition of the Soviets. They would be better able to answer their critics with solid educational achievements. Thus the effectiveness of educational leadership in America would be improved. The key position for pro-

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[27]Ralph Edwards, "The Development and Modification of Elusive Attitude," Educational Forum, No. 28, 1964, p. 42.

[28]Talcott Parsons, Structure and Process in Modern Societies (New York: The Free Press, 1960), p. 56.

viding this essential leadership is occupied by the educational administrator. Some people have been saying that it is time for the educational administrator to leave his post as manager of technical details and to accept the role of educational statesman.[29]

For the last ten years, there has been an intensification of pre-service and in-service education. It has centered on those problems shown to be the most serious and most difficult to solve.

Prior to the 1950's, in-service education for school administrators was virtually limited to professional magazines, publications coming from professional associations, annual conventions, consultants from the "successful" districts, and "shop talk" among administrators from neighboring districts.[30]

A pattern was established for the training of educational administrators during the 1915-1930 era which continued as a training model for the next twenty-five years. The focus of the program was on the preparation of school administrators. Preparation programs emphasized the development of technical skills required for the position. One

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[29] Toward Improved School Administration: A Decade of Professional Effort to Heighten Administrative Understanding and Skills (Battle Creek, Michigan: The W. K. Kellogg Foundation, 1961), p. 9.

[30] Hollis A. Moore, Jr., Studies in School Administration (Washington, D.C.: American Association of School Administrators, 1957), p. 101.

prominent feature of the training program was the omission of educational opportunities for administrators once they acquired an administrative position. The effects of this training program are strongly imbedded into the training programs of today. As Callahan put it:

> Between 1915-1929, thousands of men had received professional training at the master's degree level and had gone into important educational positions all over the country. More important, hundreds had received their doctor's degrees in educational administration and had gone into even more important positions as superintendents of large cities, as officials in state departments of education, and more important, as professors of education in teachers colleges and universities where they taught teachers and other student administrators and directed research studies even for the doctor's degree.[31]

In an effort to assist educational administrators to accept the challenge of role redefinition, various interested groups and professional organizations merged to study the problems confronting the educational administrator. The four groups most instrumental in the developmental phase of the subsequent study were the W.K. Kellogg Foundation, the American Association of School Administrators, the National Conference of Professors of Educational Administration, and the Council of Chief State School Officers.[32]

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[31]Raymond Callahan, Education and the Cult of Efficiency (Chicago: University of Chicago Press, 1962), p. 249.

[32]Toward Improved School Administration: A Decade of Profes-

Universities were invited to submit proposals to the W.K. Kellogg Foundation during the spring and summer of 1950. In the proposals to the Foundation, each university defined its own objectives for the program, all sharing the common purpose of improving educational administration.

Of those universities accepted for funding, according to a 1961 Kellogg publication study, important changes have occurred in the preparation programs. Among the specific findings of the study with respect to the current programs were the following:

1. There is a greater emphasis on recruitment and selection.

2. The orientation of students to the field of educational administration is receiving much more attention than before.

3. New teaching methods (such as case study and inter-disciplinary approach) are being introduced.

4. Courses are no longer based largely on the mechanics of administration, but are grounded in principles and theory.

5. There has occurred a breakdown of the barrier between programs for elementary and secondary principals and those for superintendents.

6. Internships receiving wide and varied use.

7. Other forms of field service have become important.

8. Evaluation of the students has come to include appraisal

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sional Effort to Heighten Administrative Understanding and Skills (Battle Creek, Michigan: The W.K. Kellogg Foundation, 1961), pp. 10-11.

of both knowledge about administration and use of knowledge in real situations.

9. Faculty members of the institutions now have wider backgrounds from social science disciplines.

10. There is more concern for guidance of students.[33]

The same decade saw implementation of the Cooperative Program in Educational Administration Project. Farquar refers to the latter part of the decade as the puberty stage of professional preparation in educational administration;

> If the childhood of professional preparation in educational administration was reflected in the glorification of individualized prescriptive techniques, then its puberty might have been the discovery and use in the late fifties and early sixties of generalizable concepts and modes of inquiry in the social sciences, which were joyfully embraced because of both their apparent relevance and their academic acceptability.[34]

Presently the training of educational leaders can probably be improved in the next generation if a new influence is exerted on young people now coming of age. Corson says:

> To equip college students to live and to lead during the

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[33] Ibid.

[34] Robin H. Farquar, The Humanities in Preparing Educational Administrators, State-the-Knowledge Series, No. 7 (Eugene, Oregon: The Eric Clearinghouse on Educational Administration, University of Oregon, 1970), p. 1.

> balance of the twentieth century will require a continuing reevaluation and enrichment of the courses and curricula through which they are trained to take their places in an evolving society.[35]

It is simply not possible to provide Corson's directive for large numbers quickly. The exigencies of the age demand that those in a position to create even partial solutions to complex problems must do so.

A proposal to create a broad-based program in administration frequently evokes the response "How will this program differ from the already existing graduate program in business or education?" No one would deny there are some fine programs in these administrative areas. But what is being suggested is that the focus of these separately organized programs is perhaps too narrow for our purpose. It should be our aim to prepare generalists in administration, equipped through exposure to a variety of disciplines and perspectives, and able to communicate effectively across institutional lines. If necessary, they should be able to assume a variety of leadership roles in any organizational setting.

The administrator of the future will have to extrapolate insights from other institutional settings in attempting to solve his own organ-

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[35] John J. Corson, Governance of Colleges and Universities (New York: McGraw-Hill Book Co., 1960), p. 2.

izational problems. For example, an educational administrator can no longer think of himself as only an educational leader. In reality he should be aware of the problems in business and government if his institution is to survive and make a contribution to society.[36]

As Litchfield argues:

> Actually our practice is years ahead of our thought.... We are thus faced with the curious dichotomy of a practice which adknowledges common ground among applied fields of administration and a body of thought which makes no effort to delineate areas of common interest. As theorists we have not yet established generalized concepts which keep pace with the facts of contemporary administration.[37]

It is generally agreed that there are common elements in administration applicable in all fields. Talcott Parsons has commented on this development:

> There is a tendency in our society to consider different types of organizations as belonging in the fields allocated to different academic disciplines; thus, students of business organization are likely to be economists, those of government and military organization, political scientists, and so forth. This tendency to divide the field obscures both the importance of the common elements, and the systematic bases of the variations from one type to another.[38]

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[36]Karen Baird, A Pilot Project of Dissemination of Information to Higher Education Personnel (Detroit: Wayne State University, 1965), p. 4.

[37]Kenneth Blanchard, "Proposal for a Curriculum Philosophy and Framework for the Center for Leadership and Administration"

Academicians generally agree that there is a need for a new approach to the subject of administration. In fact, there is at present, a broad-based Graduate School of Administration at the new campus of the University of California at Irvine. According to the founders of the school:

> The program is intended to increase the likelihood that future leaders will be able to communicate effectively and even to move easily from one kind of organizational unit to another, thereby providing society with versatile managers and administrators.[39]

There are other indications that the concept of a general school of administration is evolving. In recent years, the Department of Industrial Administration at Yale University was changed to a Department of Administrative Sciences. It was felt that the title of Industrial Administration was too narrow. President Kingman Brewster cleared the path for such a change when he raised the question:

> Are we doing everything we should be doing in order to continue to make a disproportionately large impact not only on the art and science and critical thought of the

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(University of Massachusetts, 1970), p. 4. (Mimeographed.)

[38]Talcott Parsons, Structure and Process in Modern Societies (New York: The Free Press, 1960), p. 56.

[39]University of California, Irvine, 1966-1967 Catalogue, p. 109.

world ahead, but also upon its direction, on its public and private executive leadership? [40]

Thus far the historical qualities, needs and purposes of an educational administrator as seen by Mills, Dewey, Blanchard, Halpin, Gustavson and others have been discussed. Further, the influence and importance of the various related disciplines such as history, literature, philosophy as they relate to educational administration have been emphasized. Finally, this section dealt with the various past and current in-service training approaches as revealed by the Kellogg Foundation, The American Association of School Administrators and others.

Within the Center for Leadership and Administration at the University of Massachusetts, the Ford Foundation has provided funds for the third year to support graduate students, provide faculty and support services for the development of "new" innovative programs for the preparation of educational leaders. It is the primary purpose of the Executive Leadership Program to identify, recruit, and train educational leaders who will combine advanced scholarship and moral integrity with commitment to, and skills in, institutional redirection and community improvement. The basic program objectives include:[41]

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[40]Kingman Brewster, The President's Report 1966 (New Haven, Connecticut: Yale University, 1966), p. 37.

1. Developing recruiting procedures which will permit tapping sources for leader-candidates beyond those customarily used, such as: mid-career professionals in other fields, minority group members, and men and women in education who have demonstrated their dissatisfaction with present institutional practices.

2. Build upon the crucial criteria of student selection—interest in the School of Education and committment to the Executive Leadership Program--in such a way that faculty members can effectively extend student interests and tailor individual programs to particular educational objectives.

3. Formulating substantive program offerings which will make available to students significant ideas of the humanities and social sciences as espoused by the best minds of the Five-College area, and as selected for applicability to the critical challenges facing educational leaders today.

4. Creating program structures which will assure that Executive Leadership Program participants confront and deal with comprehensive sets of the intellectual and social issues which constitute the insistent backdrop of leadership performance and with the full range of administrative tools and organizational phenomena which encompass the day-to-day activities of leaders.

5. Establishment of mechanisms for assessing the progress of individual students.

6. Developing procedures, establishing credibility, and making contacts for facilitating the placement of program graduates in key positions within the educational establishment.

7. Collaborating with other members of the Leadership consortium in the enhancement of common programmatic undertakings and for the joint study of national leadership preparation problems.[42]

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[41] Ford Foundation Executive Leadership Program, "Proposals for First Year Renewal Grant for Development Phase," School of Education, University of Massachusetts, 1970, p. 2. (Mimeographed.)

The capabilities and characteristics which Executive Leadership Program graduates will bring to their work as educational leaders include: committment to change in educational institutions and ability to cope with that change; an explicit educational philosophy firmly based in the traditions of liberal, humanistic studies, thoroughly tested as the underlying guide to executive leadership behavior; willingness to take chances, suffer frustration, and endure loneliness in the struggles for better schools; excitement in affecting confrontation between customarily isolated phenomena such as theory and practice, the public and its schools, process and content, social issues and school curricula, and moral integrity and administrative expedience.[43]

Within the Center for Leadership and Administration of the School of Education of the University of Massachusetts, an attempt to provide an alternative to traditional training programs for the educational administrator is emerging. One such alternative is the resource bank. The rationale used in establishing the resource bank was that there should be an accessible place for an administrator to ferret out data which might not otherwise be readily available.

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[42] Ibid., p. 2.

[43] Ibid., p. 3.

Information is just one of the many tools available to decision makers and problem solvers. It is a means to an end, not an end in itself. Data provided by the research bank are of no value unless used by its clients. Getting potential users to request and use the material is as important to a research bank as is acquiring the relevant information. By considering the potential administrator, there emerges a two-fold problem: (1) controlling the proliferation of information and (2) encouraging the exploration of information by the potential users.[44]

In contrast to the functions of a library, the research bank performs the following functions:

a. Acquires information needed by the school personnel
b. Organizes the material for later retrieval
c. Analyzes the documents for value, validity, and completeness
d. Synthesizes the information to give it broader meaning, greater application, and a point of reference
e. Stores the data for ready reference
f. Disseminates the information to those who need it.[45]

Not only does the research bank deal with facts from the past (as in the preparation of bibliographies) and with present occurrences

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[44]Morton F. Meltzer, Information Center: Managements' Hidden Asset (Binghamton, New York: American Management Association, 1967), p. 15.

[45]Ibid., p. 19.

(as in maintenance of a current awareness program), but it also helps the potential administrator plan for the future by providing information on new programs, product needs, and changing educational trends.

There is the element of lack of information. Although no information at all may perhaps be better than poor information, in education the result of ignorance is not bliss but rather a sharp downward trend in the productive curve. Even though the information is available, it may not be accessible. This frustration frequently plagues educators everywhere. One of the most disheartening of all situations is to discover that essential data are available, but too late to be of value to the problem at hand.

The functioning research bank not only acts to prevent duplication of effort and save the time and talent of those in the school, but also may act as a catalyst for creativity. Few schools can afford the serendipity approach to discovery. Conversely, cross-fertilization of seemingly unrelated ideas appearing in a bibliography may result in a scientific "breakthrough of tomorrow."

The wheel should not have to be reinvented every time an experiment is begun. By reminding its patrons of what has transpired in the past and alerting them to what is currently being done, a self reviewing research bank can transcend its own confines.

To provide a meaningful service the research bank should satisfy

the needs of many kinds of users. The material it contains should be readily accessible to all clients. As the research bank grows and its operations become more complex, the need for multidiscipline information increases correspondingly. Although the presence of a highly efficient information system is no guarantee that the research bank will be successful, the absence of an adequate collection of information may seriously hamper the administrator's effectiveness.

Just as the research bank has the responsibility to keep the administrator informed, the administrator has an equal obligation to keep the research bank informed of new concepts, practices and trends within the field.

The research bank may play a vital role in closing the information gap. By providing an acquisition and dissemination point, it allows the user more time to develop new information and utilize that which is already accessible. The user must be taught to include the research bank in his search cycle, along with the recall of learned data stored in his mind, the information gleaned from discussions with his colleagues, and reference to his personal files and collections. The professional seeking information will follow the simplest course in securing it. The information which is easiest of access is that stored in his mind; it will be used first. The next most convenient way to find out what he wants to know is to call upon colleagues.

He may then search through his personal files for data applicable to the problem under his consideration. The information center staff must establish user confidence by supplying quality services that meet the patron's needs and that supplement, even in some instances supplant, his former methods of acquiring data.[46]

Having established a reasonable means of disseminating information through the resource bank, it would be pertinent to consider the role of specific types of media in the training of school administrators.

During the post World War II period, B.F. Skinner published his paper "The Science of Learning and the Art of Teaching." Skinner suggested that the experimental analysis of behavior has direct implications for the teaching process and that instruments were available that could effectively be applied to this process. The presentation of a carefully sequenced set of materials and constant reinforcement of the student's response at each step of the program was the key concept in Skinner's report.

Under the guidance of Skinner, a concentrated program of evaluation and experimentation was begun at Harvard. Lumsdaine and

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[46]Lee T. Peterson, "A Summary of Implementation Phases for an Information Center" (unpublished report to Members of the Center for Leadership and Administration, School of Education, University of Massachusetts, 1971), pp. 1-4. (Mimeographed.)

Glaser[47] have collected most of the important papers that contribute to the present state of programming. More than 3,000 references are listed in their bibliography. Most deal with programmed instruction and its effectiveness. Blyth[48] reports that "we know that programmed instruction is an effective method of instruction and we know that it can be used at various levels of learning ranging from sub-human to post-doctoral."

Melching has developed the following definition of programmed instruction:

> Automated instruction is teaching done by a set of specially prepared materials called a program, rather than by an instructor. The program may be presented by a variety of media, including books, teaching machines, films, slides, and television.[49]

Melching also listed the two basic principles of preparing a program:

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[47]A.A. Lumsdaine and R. Glaser, Teaching Machines and Programmed Learning (Washington: National Education Association, 1960).

[48]William H. Melching, et al., A Handbook for Programmers (Fort Bliss, Texas: U.S. Army Air Defense Human Research Unit, 1963), p. 14.

[49]A.A. Lumsdaine and R. Glaser, Teaching Machines and Programmed Learning (Washington: National Education Association, 1960), p. 7.

1. The program is designed to accomplish a set of objectives. These objectives are precise statements of the behavior to be learned by the student. Objectives are derived from an analysis of the tasks to be learned.

2. The program is always tested by means of a criterion test of the objectives administered to the students after they have taken the program. If the students do not pass the criterion test at a very high level, then the program is revised until they do.[50]

Brown, Lewis and Harcleroad[51] point out that the most common comparative result of students using programmed materials, is that they learn at least as much as when using other methods of instruction.

Although there are numerous studies on programmed instruction and dissemination of information within school systems, the author could find none dealing specifically with the use of programmed instruction as a means of disseminating information on a pre-service basis to school administrators.

A concern that could arise when developing a new program may center around the thought "is the program successfully achieving its pre-determined objectives?" A search of the current literature concerning the evaluation of programs such as the one projected in this

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[50] Ibid., p. 8.

[51] James W. Brown, Richard B. Lewis, and Fred F. Harcleroad, A-V Instruction: Methods and Materials (New York: McGraw-Hill Book Co., 1964), p. 248.

study revealed some disagreement as to how one might achieve a reliable and valid evaluation of a dissemination program.

In this section of Chapter II, the Center for Leadership and Administration of the School of Education of the University of Massachusetts was discussed. A subcomponent, the Executive Leadership Program, funded by the Ford Foundation, was similarly discussed. Of particular significance was the resource bank concept. Finally, programmed instruction and materials as defined by Skinner, Melching and others was brought forth.

Assessment of testing procedures is frequently an arduous task. An often used assessment device is the pre and posttest evaluation method. However, there are several serious questions regarding this method of assessment. Edling[52] pointed out that when factual knowledge is tested, posttest scores almost always are enhanced as a result of pre-testing.

Krumboltz[53] acknowledged that in almost every test which was given twice, students do better the second time and that attributing improvement solely to the intervening program will result in error to an unknown degree.

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[52]Wesley C. Meierhenry, Media and Educational Innovation (Lincoln, Nebraska: The University of Nebraska Press, 1964), p. 306.

[53]Jerome P. Lysaught, ed., Self-Instruction in Medical Educa-

Fleishman, Harris and Burt addressed the problem of pretest and posttest when they discussed the twin problems of control and contamination.

> Control is necessary in order to eliminate the possibility that factors other than the change experience produce the results recorded by the criterion yardstick. The essence of effective control lies in the comparison between exposed and unexposed groups. In order to ensure the legitimacy of the comparison—that is, that the two groups are truly comparable except for the change experience—some form of measurement of both groups must be made usually before the change experience takes place. This measurement, which is essential to establish comparability, introduces many additional factors to further contaminate the result. Thus, control inexorably brings with it contamination.[54]

Richard Solomon discussed three major sources of possible contamination. First is the contamination which arises from obtaining a measure of the criterion before the onset of the change experience. This measure of the criterion may sensitize the participants so that the change results are affected. The contamination exists whether the yardstick is objective or subjective in nature. Solomon cites the following example:

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tion (Rochester, N.Y.: University of Rochester, 1968), p. 140.

[54]Donald L. Kirkpatrick, "How to Start an Objective Evaluation of Your Training Program," American Society of Training Directors, Vol. 10, No. 3, (May-June, 1956), p. 22.

> We feel that the pretest operates directly upon the effectiveness of the training or interacts with the training process. That is, there is a great possibility that merely taking a pretest changes the subject's attitude toward the training procedure. Or it may conceivably change the set or attentional factors important to the effectiveness of training. Thirdly, it may actually change the manner in which the subjects perceive the training material.[55]

Therefore, the completion of questionnaires or an interview before training, both of which require an individual to think about a certain subject, may predispose that individual to be more aware of that subject when it is referred to during the change experience.

The experimental data to support or refute Solomon's contention is sparse. Studies have provided data which indicate that i.e. the effects of training alone would have been greater had the questionnaire not been administered;[56] and conversely the data from other studies indicate that completing questionnaires before a change experience does not sensitize the subjects and, therefore, does not significantly alter the reported results.[57] However, the possibility that this

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[55]Richard Solomon, "An Extension of Control Group Design" Psychological Bulletin, Vol. 46, No. 2, (March, 1949), pp. 137-150.

[56]Ralph R. Cantor, Jr., "The Use of Extended Control Group Design in Human Relations Studies," Psychological Bulletin, Vol. 48, (1951), pp. 340-347.

[57]Robert E. Lana, "Pretest Treatment Interaction Effects in Attitudinal Studies," Psychological Bulletin, Vol. 56, No. 6, (1959), pp. 293-300.

source of contamination exists may seriously bias the results.

The second source of possible contamination is the effect of the passage of time and occurrence of uncontrolled events.

A third identified source of contamination arises from the sources of the data and the manner in which the data are collected. Previous training evaluation studies have utilized at least six different sources for the collection of data. Lundburg cites the following sources: (1) data from subordinates or superiors, (2) data from observers about the effectiveness of change occurring in trainees, (3) trainer's opinion of attitude and progress of trainees, (4) opinions of trainees about the value of or their acceptance of a particular change agent, (5) the measurement of relevant attitude feelings and beliefs of trainees, and (6) company personnel and/or productivity records.[58]

These three contamination problems—the criterion yardstick, the passage of time, and the collection of data—are endemic to all evaluation efforts. In order to effectively deal with them, additional controls must be incorporated into the evaluation design.

The Solomon Four-way Design is frequently proffered by methodologists[59] as the answer to this control-contamination situation.

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[58]Vera Singe Lundburg, "A Critical Review of Attitude Change in Management Training" (unpublished M.S. thesis, New York State School of Industrial and Labor Relations, Cornell University, 1963), pp. 193-204.

Figure 1 presents the process for implementing this design.

	Experimental group	Control groups		
	A	B	C	D
Before measure	Yes	No	Yes	No
Training	Yes	Yes	No	No
After measure	Yes	Yes	Yes	Yes

Figure 1—Procedures for implementing the four-way research design.

As is illustrated, a total of four independent groups participate differently in the three experiences consisting of the training experience, the pretest, and the posttest.

With the four-way design, it is possible to precipitate out four different factors—three contaminants plus a purer change-agent effect.[60] These are:

1. A test or questionnaire effect. By comparing the pretests and the posttests for only group C, the twice-tested but untrained group, the effect, if any, of the administra-

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[59]Claire Selltiz, et al., Research Methods in Social Relations (New York: Holt, Rinehart, and Winston, Inc., 1964), p. 88.

[60]James A. Belasco and Harrison M. Trice, The Assessment of Change in Training and Therapy (New York: McGraw-Hill Book Co., 1962), p. 31.

tion of the questionnaires or yardsticks can be ascertained.

2. An interaction effect. By comparing the posttest results of group A with the posttest results of group B, the effect of the interaction of the questionnaire with the change experience itself can be ascertained. Another way of isolating a possible interaction effect is to compare the posttests of group A with those of group D. This comparison reveals the full impact of the combination of the initial questionnaire and the change agent as compared with a complete absence of either.

3. The passage-of-time effect. By comparing the posttest results of group D with the pretest results of groups A or C, or an average of both, the contaminating effects of any extraneous event can be isolated.

4. A change-agent effect. The possible changes introduced by the change agent can be ascertained in two ways. The two traditional comparisons—before- after of group A, and group A compared with group C—yield an approximation of the changes associated with the change agent. They are contaminated, however, by the first three factors. A purer change-agent effect can be deduced from a comparison of the posttest means for groups B and D, neither of which has been contaminated by a pretest.

Although the four-way design has some obvious advantages, several methodologists have found many disadvantages to the design.[61] Many of these are related to the practical disadvantages of carrying out the design. For example, in some assessment approaches the administering of the evaluation instruments takes from four to ten hours.

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[61] Belasco and Trice, op. cit., pp. 31-32.

In reference to the four-way design Belasco and Trice conclude:

> Upon reflecting, it seems that the Solomon design arose in response to the instrument contamination problems associated with the traditional evaluation designs. Rather than dealing with the overt symptoms of the problem, however, it might be more profitable to examine its root course and question the utility and necessity of the pretest itself. If the pretest could be eliminated, it would obviate the basic need for the four-way design.
>
> Presumably, the pretest is necessary in order to establish a starting point from which to compute change. The assumption is that individuals will vary in their initial attitude, knowledge, and behavior. In comparing the results of two groups, one trained and one untrained control, if the researcher does not know the starting points on his criteria for both groups, and differences after the training may be attributed to different starting points. Yet, this information is secured at a high price.[62]

Upon reviewing several studies Cantor, et al.[63] concluded that many evaluation studies indicated that the two groups on the pretest are very similar on criteria considerations. This suggests the possibility that the pretest may not be necessary at all.

Due to this factor Belasco and Trice proposed a more practical design. They state:

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[62]James A. Belasco and Harrison M. Trice, The Assessment of Change in Training and Therapy (New York: McGraw-Hill Book Co., 1962), p. 154.

[63]Ralph Cantor, Robert Lana, and Robert Katzell, "Testing a Training Program in Human Relations," Personnel Psychology, Vol. I, No. 3, (1948).

> In reviewing the problem there is at least one alternative to the pretest. With large numbers of 200 or more, through random division into two unpretested groups consisting of one training group and one untrained control group, in all probability the sampling process will yield groups with comparable starting positions on the criteria and eliminate the need for a pretest. The probability of drawing comparable groups increases greatly if the sample is stratified on those variables which probably lead to differential attitudes, knowledge, or skills. In our training evaluation study, for instance, stratification on the basis of sex, division employed in, and type of work supervised minimized the possibility of drawing groups which would have been significantly different from each other. Stratification on certain personality traits would even further remove the possibility of drawing groups with different starting points.[64]

It is appropriate to identify other dimensions of problems related to evaluation such as: (1) contacting the persons to complete the evaluation measures; (2) getting the participants to fully complete the measures and returning them; (3) locating a valid control group; (4) and maintaining the original design of the study. These problems often become major inhibiting factors in attempting to assess a training approach.

Regardless of whether the researcher employs the objective or the subjective approach, it is apparent that there are two techniques that can be used for gathering information. The first is the use of the written questionnaire which reveals either the trainee's reaction to

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[64] Belasco and Trice, op. cit., pp. 154-55.

the training (subjective approach) or his attitudes on subjects external to him (objective approach). The second technique is personal interviewing. There are two essential problems in framing effective questions. The first is whether to use open or closed questions. Questions are open if they ask the respondent to answer in an unrestricted fashion but within the broad limits of a topic. They are closed if they force the respondent to choose from presented alternatives.

There are advantages and disadvantages to both types of questions. An advantage to the open question is that the respondent is able to convey a greater amount and variety of information. Therefore, more facts can be learned from very few questions. But the open question has many disadvantages when applied to evaluation. Since the responses are so diversified, more effort and expense is required to interpret and classify the data. Comparability on a common issue, from respondent to respondent and from group to group, is usually impossible. In addition, use of the open question assumes that the trainee is sufficiently motivated to formulate and express his own ideas. If questions are in any way embarrassing or anxiety-producing, there is a tendency to repress those feelings when responding to the open question. The respondent's avoidance reaction adds to his unwillingness to answer freely.[65]

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[65] Ibid., p. 159.

The disadvantages of the open question are not characteristic of the closed type question. On the contrary, quite the opposite is true. Because the closed question eliminates diversity and ensures the same stimuli for response from every trainee, it can be quantified. If well prepared, the closed question permits comparability between individuals or groups. Also, by providing specific choices, the closed question reduces barriers to response.

Forcing a response is probably more likely to produce error in closed questions, thereby reducing the validity of the responses. Severe bias may result for two reasons: (1) the respondent is forced to take a position even though he may not have one, and (2) the choices may not fit the respondent's feelings.[66] For example, he may be quite ambivalent about his training experience; he may not care either way in responding to a question. These different feelings are impossible to express in response to a closed question. It has been found that even if the closed question includes a space to indicate responses other than the choice given, this may be relatively useless since respondents tend to avoid the "other" category and force themselves into the mold provided.[67]

In an attempt to test several of their hypotheses concerning the

[66] Ibid., p. 159.

[67] Ibid., p. 159.

problems of and approaches to the assessment of training, Belasco and Trice[68] conducted an intensive evaluation of an industrial training program. The training program which was evaluated utilized a conference leadership discussion pattern based on case material and key guiding questions. A professor from a major university, a recognized expert in this field, led the discussions. As explained to the participants, the basic program strategy was to analyze and internalize all aspects of difficult problem-employee situations.

The following specific training objectives were defined in advance of the training:

1. More knowledge about specific kinds of employee behavior and methods for handling that behavior.

2. More favorable attitudes toward problem employees.

3. More willingness to identify, confront, and take constructive action toward problem employees.[69]

The four-way research design was implemented in the study. The measurement devices consisted of action scales, knowledge scales, and semantic differential scales; plus oral interviews with the participants after the sessions were completed. The following

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[68] Ibid., pp. 71-98.

[69] Ibid., p. 80.

conclusions emerge from the question "What changes are associated with training?"

1. The changes associated with training are small.

2. Testing alone is associated with sharp changes.

3. The combination of testing and training, or the interaction effect, is more effective than training alone.

4. The traditional evaluation designs do not yield an adequate means of assessing these changes associated with training since they introduce major contaminants.

5. The Solomon Four-way Design, although an improvement over traditional evaluation methods, poses serious operational difficulties including the problems of small sample size, rigid training content, and sampling inadequacies.

6. One way to improve the probability of change associated with training is by selecting individuals for training on the basis of the match between their predispositions and the demands of training.

7. Training serves many unintended ceremonial functions. Supervisor training can act as a ceremonial to produce

   a. Feelings of inclusion and organization identity
   b. Therapeutic and cohesive results
   c. Boundary identity between groups and organizations
   d. Fewer internal aggressions
   e. Stability in organization undergoing change and reduction in anxiety of individual members involved
   f. The removal of one role identity and the placement of another in its stead.[70]

Following is a summary of three of the recommendations of Bel-

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[70] Ibid., p. 119.

asco and Trice which are appropriate to the present study:

> First and foremost, in training we urge a functional role for the questionnaire as a change agent, either independent of, or in concert with, training. As this study demonstrates in many ways, completing the questionnaire before actual training can add to the training effect by sensitizing the trainee to important information or by raising doubts and anxieties which create a readiness to seek additional information. Furthermore, questionnaires may be useful not only where training deals with new information, but also where it reviews information presumably already possessed by the trainee.
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> Second, the ceremonial aspects of training should be deliberately planned for and fostered. Training, for instance, might be a good way to reduce tensions arising out of major organizational and technological change.
>
> Enhancing the ceremonial aspects of training may increase the change power of the training program itself. In short, thoughtful managers may increase the change poser of the training not only for the bread-and-butter changes in individual skills, knowledge, and attitudes it can produce but also for the ceremonial side effects that produce improved supervisory morale, increased identification with the organization, and decreased organization.
>
> Third, they suggest the use of the simple unpretested two-group design as the most efficient and valid evaluation mechanism. The comparison of after-training scores of one group which has been trained with those of another group which has not been trained avoids all the contaminants introduced by the pretraining questionnaire administration. The sensitivity of this two-group comparison can be increased through either random sampling from the entire group if the group is large enough (larger than 200 for instance) or random selection after the overall group has been stratified on those variables which probably lead to differential attitudes, knowledge, or skills. In addition, stratification on certain personality traits would even further remove the possibility of drawing groups with different starting points.[71]

In the final section of Chapter II, problems frequently associated with assessment techniques were discussed. Questions raised by Edling, Krumboltz and others supported these contentions. The influence of Richard Solomon regarding contamination problems and his four-way research design assessment process was identified. Cantor was cited as an original critic of the four-way design. The work of Belasco and Trice was introduced in support of the value of the open and closed question design technique as well as to support Cantor's hypothesis regarding the value of the posttest only theory.

In the following chapter is presented a description of the background and development of the audio modular instructional units used in the present study. The composition of the units and the procedures used in the field testing of the units is also set forth.

[71] Ibid., pp. 156-157.

CHAPTER III

A DESCRIPTION OF THE BACKGROUND, DEVELOPMENT COMPOSITION, AND FIELD TESTING OF THE AUDIO MODULAR INSTRUCTION UNITS

In Chapter II a review of the literature disclosed some of the existing practices in the training of school administrators. Most authorities in the field of education are aware of the need for change; this is not the problem. The real problems of change lie in the implementation and acceptance of new ideas. For years, educators have looked to neighboring districts for new programs, new concepts, new salary schedules, and new teacher training programs. Many of these programs though quite successful in one district have failed others. Until recently these failures were blamed on such contingencies as 1) the superintendents failure to build a rationale for the necessity of such a program, or 2) the failure of the program to meet the needs of the students and the teachers, or 3) the failure to involve the right people when the decision to change was made, or 4) the failure to recognize differences in community makeup which could alter the results of a program. The list could go on and on ending only when the last district made its last attempt to implement the last new program.

In an attempt to identify the possible reasons behind many failing programs, this author drew two untested conclusions. These conclusions are:

1) The administrator is potentially the most important change

agent in the school setting and 2) non-informed administrators tend to be stagnant and limited change agents. If these two conclusions can be accepted, then one can begin to see why the school has failed to keep abreast of the changing times, why the school is no longer meeting the needs of a high percentage of its students, and why it is no longer getting the community support it once had.

The millions of dollars being spent in industry for evaluation purposes, as well as training, are just not visible in public education today. In short, educators in general have not been held accountable for the dollar expenditures with which they have been entrusted. Education must begin to show where a dollars worth of increased expenditure does produce a more superior product!

Educators must find ways of keeping abreast of the detailed happenings around the educational circuit. If the educator is to be an effective change agent, he must keep abreast of happenings around the country. He must learn to document new programs, and he must see that all important data is sifted down through the hierarchy, reaching those individuals for whom it was intended.

Small insignificant change can be, and is, accomplished daily without complete support of leaders atop the educational hierarchy. However, change of greater magnitude should be supported, if not initiated, by the educational leader.

Dr. Charles E. Brown points toward a need for leaders to carry out a new concept in public education when he states:

> I hold the conviction that a new concept of public education is needed in this country, a concept that will enable us to prepare a generation of men and women who are more able than we to cope with and to live fully with their world. I agree with those who say that we need to find ways to educate men not only to think, but to act, and to feel. Man's inhumanity to man is real, and more than anything else, the schools must educate for humanity—by helping people to understand who they are, how they and their institutions relate to other people, and how human behavior can change. There are those who will say that this is not a new concept of education, but it is new in the sense that the schools have not fulfilled it in the past. We must... in the future. [1]

Quite clearly, science and technology in the service of a free, dynamic, democratic society has given us the capability of unprecedented control over our national life and environment. It took 160 years for the first suggestion for scientific study of steam power to materialize into a locomotive; it took less than six years for the nuclear-fission chain reaction to result in the atomic bomb. A man takes 1 1/2 minutes to multiply two five-digit numbers; a computer does it in three nanoseconds—30 million times faster.

Economists and sociologists see a strong continuing upward

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[1] Charles E. Brown, "Needed: Relevant Preparation Programs for Educational Administrators," Trend, A Cooperative School Service Center Publication, School of Education, University of Massachusetts, Vol. VI, No. 1, (Fall, 1969), pp. 6-11.

spiral of the Gross National Product to perhaps $2.25 trillion by the year 2000. Already we are becoming a society where services and information are our biggest business. By the turn of the century, only about three percent of our labor force of 140 million will be employed in agriculture, and 15 percent in manufacturing. The remaining 81 percent will work in the service industries. The average work week is due to fall to about 31 hours by the year 2000.

With all the free time at their disposal, most Americans may find themselves hard put to find a substitute for the 40-hour work-week. No doubt, many Americans will turn to education to fill the gap of free time. We can no longer be concerned with just a K-12 educational program in the communities of America. We must get used to the idea that demands from society will force the educational community to provide an educational program that will service man from "womb to tomb".

The practicing administrator needs help in keeping abreast of the current trends in education and the constant demands of society. Help should come in the form of high-powered, very informative material that can be utilized by the educational administrator with a minimum of time and effort. One such solution lies in the form of the audio modular instructional units that were developed for this study.

The Movement Toward a Performance-Based Certification Program for Teachers

For the past four years the Florida State Department of Education has moved in the direction of performance-based certification programs for teachers in the state. This program for teacher training became known as the Florida EPDA B-2 program. A major objective of the 1969 Florida EPDA B-2 Program was to develop individualized teacher training materials. These materials were designed to be used in either pre-service or in-service training for teacher education. They were prepared in the form of self-contained "packaged" modules aimed at specific teaching skills or specific concepts fundamental to teaching. Each module was expected to include all of the information and directions needed to accomplish a set of predetermined goals.

The model used in preparing these materials was designed so that each of the important elements would fulfill specific functions in assisting a user to achieve the stated goal of the module. Materials which follow this basic model would fulfill these specifications. Following is a summary of the elements that were included in the module.

1. Objectives: the objectives were to describe clearly what the user should be able to do after successfully completing the activity. They were stated in terms of observable, measurable behavior

for the user.

2. Rationale: the rationale provided the reasoning which justified the acquisition of the skill.

3. Materials: all of the materials needed to complete the suggested activities were either to be included or described. Source references were to be given if it would be necessary to order supplementary printed or non-printed materials.

4. Procedures: procedures were to be designed so that the user could follow them in chronological sequence as he worked to achieve each specific objective. The sequence for each objective would normally include three types of activities; a) exposure to information (perceptual input), b) information-processing (concept formation), and c) appropriate practice with feedback.

5. Evaluation: the major purpose of the evaluation activity was to assess the level of mastery of each of the specific objectives for the module as a basis for deciding whether further instructional activities should be pursued. Pre-assessment measures were to be used to determine whether the user was ready for the objective or whether he already knew the skill and did not have to do the package. Post-assessment measures were to be used to deter-

mine either that the objectives had been achieved, or that further instructional activities should be pursued.

The State Department of Florida sought the help of hundreds of teachers in the state to produce these training modules. The modules which were produced were distributed to teachers throughout the state for their evaluation of the material and the method of presentation. Due to the positive feedback concerning the effectiveness of the packets, many of the State Department officials expressed an interest in exploring the feasibility of utilizing the modular approach for in-service training of the elementary and secondary principals within the state.

Initial consideration was given to following the developmental process utilized in the teacher training program. The most prominent feature of that process was teacher involvement; teachers had been instrumental in the development of all the "instructional packages". This development procedure required that several teachers be given release time from their regular teaching duties. Since it was felt that most school districts would be reluctant to give administrators release time, other alternatives were sought.

Finding little interest on the part of the administrators within the state to generate these self-contained learning packages, the State

Department officials looked to the School of Education at the University of Massachusetts for assistance. Here within the Center for Leadership and Administration, a group of faculty and graduate students were eager to develop this new approach to in-service training of the school administrator.

The Initial Development of the Audio Modular Instructional Units

Personnel in the Center for Leadership and Administration examined several of the B-2 Modules which had been developed for the Florida teachers. It was decided not to utilize that particular format for the new training modules. The format and instructional approach utilized in the IBM Audio Instructional Units appeared to provide a more appropriate approach for the school principals.

The IBM units were based on a modified form of the programmed instructional technique. They utilized basically two components; 1) an audio tape, and 2) a guidebook including pages in a notebook binder (these pages included graphs, charts, review questions and answers, written case studies, etcetera.) The audio tape carried the bulk of the instruction, while the pages in the notebook were designed to complement the audio presentation. The written introduction in the notebook carried the following elements:

Purpose of Audio Instruction: this included a description of the audience for which the unit was developed, and a description of the general purpose for which the unit had been developed.

Description of the Module: this section included a general description of the content included in the unit, and some of the experiences in which the participant would become involved. This section also included the objectives to be achieved by the participant upon completion of the unit (these objectives were not in performance terms).

Prerequisite: this section suggested to the participant the units which he should have completed before pursuing the present unit.

Time Requirement: this section stated the approximate time required to complete the modular unit.

Materials and Resources Required: this section listed the equipment and materials which were needed by the participant for completing the unit.

Instructions to the Participant: this section suggested to the participant that he would derive the greatest benefit from the unit if he isolated himself and allowed sufficient time to complete the module.

It also explained the working mechanics of the audio tape and the guidebook.

The majority of the IBM Audio Instructional Units had been designed for training technicians and engineers in sophisticated technical skills. The Center for Leadership and Administration chose to involve human relation skills rather than technical skills. Major changes were made in adapting the IBM Audio Instructional Units for use in the training modules for school principals.

The initial modules developed were designed to function as one component of a comprehensive in-service program and to act as a catalyst for change through group interaction and individual experimentation. The Audio Instructional Units were individualized, allowing the participant to select the skill he wanted to improve. The modules were self-evaluating, providing the participant an opportunity to determine his progress as a result of the experience.

The first audio instructional modules were developed around a selected aspect of staff development relating to the administrator's role. The titles of the original four were:

1. Staff Development: The Use of Supportive Feedback
2. Staff Development: Basic Elements of the Communication Process

3. Staff Development: The Helper-Helpee Relationship--Part I

4. Staff Development: The Helper-Helpee Relationship--Part II

The physical appearance of the original four modules were basically the same. All of the module's components were enclosed in a plastic three-ring binder. The basic components of the binder were a casette tape, a plastic envelope which housed the casette tape, and a printed text. The specific components of each text were: 1) a title page which included the name of the individual who developed the module, 2) a table of contents, 3) an introduction stating the objectives of the module, a description of the module, the prerequisites required for participation, and the time required to participate in the module, 4) instructions to the participants, and 5) a follow-up activity.

The casette tape provided the audio portion of the instruction which was the essence of the module.

The Development of a Pre-Service Audio Instructional Module

At the time the Center for Leadership and Administration was developing the instructional modules for the Florida State Department, another group of students in the Administration Center were conceptualizing a resource bank containing various learning experiences avail-

able to both students and staff members.

Since much of the student's time is devoted to classroom experiences it is important that the student select those classroom experiences which will be most beneficial to his educational growth.

The process of trying to select the most desirable learning experience within the context of a course selection has not been totally satisfactory. If it were possible to provide the student with a modular experience related to the class activity prior to that student's actual class committment, the chances of his entry into a desirable classroom setting would be greatly enhanced. From the short modular experience the student should be able to determine whether he is willing to spend an entire semester working toward an in-depth approach to the subject. Therefore, the contribution a resource bank could make toward student growth could lie in the area of human resources. A resource bank stocked with modular offerings, demonstrating the expertise of the faculty, could actually make a student's course selection more realistic as well as increasing the visibility of the participating members.

If this program could be developed successfully, the interest level within those courses that had provided some pre-entrance experience should be much greater. Also the instructor would know the level of exposure for the students.

Having followed the progress of the Florida audio instructional modules being developed for in-service training of school administrators, it was decided to adapt this method of instruction for the pre-service training program.

The concept of the program was presented to several faculty members in the Center. At that time they all expressed considerable interest in trying such an approach to the training of school administrators. The next task was to find an instructor willing to cooperatively work out one or two initial modular units for a trial program.

Dr. Kenneth Blanchard from the Center for Leadership and Administration suggested that the initial modules be built around the administrator as a "leader" in the educational community. With Dr. Blanchard supplying the background information, the initial planning began.

The initial step was to formulate a statement that spelled out what the learner was expected to do, know, and feel as a result of the learning experience. In this case, all planning revolved around the objective of "Life Cycle Theory". The development of "Life Cycle Theory" is based on a curvilinear relationship between Initiating Structure and Consideration behavior and "maturity". This theory attempts to provide a leader with some understanding of the relationship between an

effective style of leadership and the level of maturity of followers.

Second, a criterion test based on the major objectives was designed and discussed which led to alternatives and sub-objectives for the module(s).

Third, the out-put function of the module was discussed. The concept now became: "What was to be learned by the student so that he can behave in the way described by the objectives specifications."

Relying on Banathy's Instructional Style of System Design,[2] it appeared the learning task must be broken down into two different input sessions (modules).

The first module designed and tested was entitled "Leader Behavior," and was primarily geared toward the informative, or knowledge level, of learning. The Leader Behavior Module was designed around its own sub-objectives which were to:

1. develop leadership theory knowledge over the past years, beginning with the continuum approach and ending with the sophisticated Tri-dimensional Leadership Effectiveness Model.
2. develop and discuss McGregor's Theory X and Theory Y.
3. distinguish between the value of your perception of your own style of leadership and the perception others have of your leadership style.

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[2]Bela H. Banathy, Instructional Systems (Palo Alto, California: Fearon Publishers, 1968), pp. 26-30.

4. discuss some of the procedures and difficulties encountered when behavioral change is attempted.

5. refute the argument that there is a "best" style of leadership.

As one progressed through the Leader Behavior Module the participant was instructed to turn off the tape presentation and fill out the Leader Opinion Questionnaire which gave the participant a "feel" for his own style of leadership. Upon completion of the questionnaire, the basic styles of leadership were discussed on tape giving the participant an opportunity to categorize his leadership style. Later on into the instructional program the participant was again instructed to turn off the tape presentation and complete a second questionnaire. Although quite different from the first, the second questionnaire was designed to reinforce the findings of the first questionnaire. The participant now began to leave the knowledge level and move toward the comprehension level, according to Bloom's Taxonomy of Educational Objectives,[3] where he was now translating and interpreting data.

At this point in the modular program the participant had defined his own style of leadership as well as having been introduced to various other styles. The module discussed a third questionnaire which

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[3]Benjamin S. Bloom, ed., Taxonomy of Educational Objectives (New York: David McKay Company, Inc., 1969), pp. 44-50.

the participant was encouraged to have completed by his subordinates. This would provide the participant knowledge as to how his style of leadership was perceived by others.

The final phase of the Leader Behavior Module was devoted to an explanation as to why a leader must know how his leadership style is perceived by others. For it is the leader's followers who determine the degree of power controlled by the leader.

Throughout the module the participant was constantly involved in activities which were designed to hold his attention and keep the experience from being "just another lecture". Charts and follow-up materials were used along with the questionnaires to emphasize further points of importance.

While the Leader Behavior module emphasized throughout the lack of a "best" style of leadership, the second module (Leader Style Adaptability) emphasized how the situation determined the best, or most appropriate, style of leadership.

As the participant engaged in the Leader Style Adaptability module he encountered a new factor, that of maturity. The tape presentation pointed out the various conditions which could affect successful leadership. These two new conditions, situation and maturity, were dealt with in depth before the participant was asked to test his knowledge of "Life Cycle Theory".

According to Bloom the module had now moved the participant toward the application level of educational objectives. As the second module was designed for a minimum of two participants, the individuals were given a chance to test competatively their application of the Life Cycle Theory.

Given a game board, situation cards, and action cards, the participants were to draw first from the stack of situation cards. This stack outlined a particular educational setting; i.e. "You have been promoted to a new position. The previous administration was uninvolved in affairs of the group. The group has adequately handled their tasks and directions. Group interaction is good."

Drawing from the action card stack, the participant draws a card giving four choices of leadership action that may be used on the above group. An example of a leadership action card is:

A) Emphasize the importance of deadlines and tasks.

B) Involve the group in problem solving.

C) Talk individually with members, and set goals.

D) Do not get involved; let group work in your absence.

As can be seen, these choices range from a high degree of structure and consideration to a very low degree of structure and consideration. It is up to the participant to analyze the existing group and de-

termine what type of action he would recommend using on this group if change were to be initiated. Each action choice had been previously analyzed for the best theoretically sound choice. The contents of the module contained an immediate feedback sheet whereby the participant could check to see if he had made the best choice. Each action choice was rated on the sheet and depending on the participant's choice he was awarded points.

As the participants competed in the "Leader Style Adaptability" simulation game, they applied information learned from both modules plus having the advantage of immediate feedback to reinforce all decisions. It is therefore possible to follow the participant through Bloom's knowledge level, into comprehension and finally a degree of simulated application.

The entire "Leader Behavior" instructional unit was self-contained in a three-ring notebook which housed; 1) a casette tape, carried in a plastic pocket within the notebook, 2) copies of the Leader Opinion Questionnaire, the Leader Behavior Description Questionnaire and a revised copy of the Managerial Grid, 3) the printed text with follow-up material, and 4) the evaluation packet.

The audio tape was used a good deal more for the presentation of instructions as well as the actual predetermined message than was utilized on the four initial modules designed for the Florida State De-

partment. This change of format was made to compensate for earlier criticisms that the participant was not sure when he was to engage the use of the tape recorder.

The packaging for the "Leader Style Adaptability" module was changed somewhat to compensate for additional loose material having to be housed in the unit. The three-ring notebook was abandoned in favor of a rectangular box. The box was designed to carry 1) two copies of the guidebook, 2) two copies of a follow-up article, 3) a game board, 4) a stack of situation cards, 5) a stack of action cards, 6) the audio casette tape, 7) two place markers for the game board, 8) a feed-back score sheet, 9) participant's progress sheet, and 10) an evaluation packet.

The printed text included in the module contained an overview of the material presented in the audio portion of the unit. This text became the property of the participant upon completion of the unit.

The introduction pages for each of the two modules are included in Appendix A of this study.

Summary

In the previous section the factors influencing the initiation and development of the pre-service audio modular units were discussed. An overview of each module was presented. The major objective was

defined along with the independent objectives for each module. Banathy's Instructional Systems approach was discussed and the material presented was analyzed through the use of Bloom's Taxonomy of Educational Objectives.

The Procedures Used to Field Test Audio Modular Instruction

The field testing of the audio modular instruction units was conducted on the campus of the University of Massachusetts. Since the instruments were designed primarily as pre-service training for school administrators, it was decided to limit participation to those persons enrolled in the Center for Leadership and Administration and taking at least one course during the semester the modules were tested.

The experimental field test for the first module on "Leader Behavior" was conducted with the cooperation of ten (10) graduate students in the school of education who had previously been exposed to the material in the module. Their exposure came in the form of a structured class setting with Dr. Blanchard. This initial study was conducted as a means of checking the material in the packets for content errors, arrangement of materials, as well as completeness of the unit. After the initial test, revisions were made before presenting the packets for the actual testing program.

Participants for the modules were selected using the following criteria: 1) they must have been enrolled with the School of Education, University of Massachusetts, and the Center for Leadership and Administration for at least one course during the testing period, 2) they must have at least a bachelors degree, 3) they must have been, or are training to be a school administrator, and 4) they must never have been exposed to the Leadership Theory presented by Dr. Ken Blanchard either in the form of a classroom setting, a modular topic presentation, or a weekend retreat. Persons who were exposed to Dr. Blanchard through guest lecture presentations for some other course were considered uncontaminated, and were considered for the study. The composition of the experimental group then was to include both full and part-time graduate students, all of whom either had aspirations of becoming, or were already school administrators.

Initially, 25 people progressed through the first packet on "Leader Behavior". There were no special instructions given to this group other than showing them the various components of the module and making arrangements for its return upon completion of the unit and the accompanying evaluation packet. Since this module was designed as an individualized learning packet for self-instruction, the participant was encouraged to take the packet of materials to a quiet area and complete the material in one setting.

A variation of this procedure was utilized with a selected group. They were encouraged to work independently, but in the company of a second individual who was also listening to the tape presentation and doing the exercises as designated. This variation was initiated in an attempt to see if the companion approach produced a variation in the semantic differential or in the trainees attitude toward the audio modular approach.

About one-half of the participants were enrolled in a course offered by the Center for Leadership and Administration called "Decision Making". This course was a natural testing ground for the two modules on leadership skills. With the permission of the instructor, two class periods were devoted to testing out the packets, still on an individual basis, then attempting to correlate the theory of leadership skills to the decision making class.

Those people that had participated in the "Leader Behavior" module were approached once again to participate in the second module on "Leader Style Adaptability". The second module carried a prerequisite of the first modular unit, therefore it was essential the first field testing group participate in the second module. The original planning phase of the study called for twenty people to go through both modules. Actually, twenty-five people participated in the first module. There was not a single person who participated in the first module that re-

jected an opportunity to participate in the second. However, due to illness, previous commitment, and travel, three of the persons who went through the first module were just not available when the second module was ready for testing.

CHAPTER IV

METHODOLOGY OF THE STUDY

The major objective of the study was to determine the suitability of utilizing the audio modular instructional approach as one alternative pre-service training technique for presenting selected concepts and skills to students of school administration who are enrolled in the graduate program in the School of Education, at the University of Massachusetts. The purposes of the study were:

1. Develop two audio modular instructional units to be used specifically by the graduate students who are enrolled in courses in the Center for Leadership and Administration.

2. Design a format and procedures for field-testing the developed audio modular instructional units.

3. Assess the suitability of utilizing the two audio modular instructional units for presenting the selected skills and concepts to students of school administration. Suitability was defined for this study as: the usefulness of the audio modular instructional approach as determined by the data obtained through the use of a variety of data gathering procedures utilizing both subjective and objective assessment approaches. The criteria utilized were: a) participants' interest in the experience, and their motivation as a result of the ex-

perience; b) the worth of the experience as compared to alternative experiences as perceived by the participants; c) the connotative meaning of the experience, as compared to the connotative meaning of a concept which signifies any other type of experience by which the participant could achieve the learning objectives; d) the cognitive change that takes place in the individual as a result of participating in the experience; e) the potential for further development of learning experiences utilizing the same instructional approach; and f) the expenditure of time and money used in the development and production of the learning experiences.

4. Develop recommendations on a) the further development and use of audio modular instructional units; and b) further assessment of the audio modular instructional approach.

In the previous chapter a description was made of the four audio modular instructional units which were originally produced by the Center for Leadership and Administration at the University of Massachusetts, for the State Department of Education in Florida. Following this description, two new modular instructional units were described that were used by the Center for Leadership and Administration as one alternative approach to the pre-service training of school administrators. Chapter III also included a description of the proce-

dures used in the field testing of the modules for the present study.

It is the purpose of this chapter to: 1) describe the study populations, including the experimental groups and the control group; and 2) to report and elucidate on the assessment procedures used in attempting to determine the suitability of an alternative pre-service training approach for presenting selected concepts and skills to aspiring school administrators.

Study Population

The study population for the present study consisted of three separate groups, two experimental and one control. Experimental "Group A" consisted of those twenty-five people who went through the "Leader Behavior" instructional module, and the twenty-two people that were able to continue with the second module on "Leader Style Adaptability". Experimental "Group B" consisted of fifty-three persons attending one of two workshops initiated by Dr. Ken Blanchard in which the identical material presented in the modules was presented "live". It was suggested that the cognitive learning achieved either through an audio modular presentation or in a "live" setting would produce essentially the same results on a competency test. It was also suggested that the attitude of the participants toward an audio modular presentation would be less positive than if they (the participants) had

the opportunity to interact with an instructor when the material was being presented. To verify these conjectures it was necessary to solicit the aid of two experimental groups. More participants for experimental "Group B" were utilized to ensure the best possible match with "Group A". The matching process was accomplished through the use of a three-dimensional matrix using age, experience, and degree held as the prime factors for consideration. Since those who participated in the modules had contributed more time to the project survey, it was decided to attempt to match experimental "Group B" and the control group to experimental "Group A". The matching process identified the twenty-two respondents for each of the three groups whose efforts would provide data for this study.

In Chapter II Belasco and Trice emphasized the importance of matching the participants if the pretest-posttest procedure was not utilized. A control group of forty-six students was employed in the study. These students from "Group C" had never been exposed to "Life Cycle Theory" of leadership. Of these forty-six students, twenty-two were identified to complete the matching process. As in the case of the two experimental groups, the control group was administered the twenty-eight question competency test used in the assessment process (Appendix A).

In the following sections is presented a description of the compo-

sition of the experimental groups as they compared with each other, as well as the control group in relation to the following factors: 1) sex, 2) age, 3) present position, 4) previous position (this was done to identify those people who are now full-time graduate students that may have had some administrative experience in the past), 5) number of years of administrative experience, 6) the setting of the school in which the member was employed, and 7) highest academic degree held by the member.

The Composition of the Experimental Groups Compared with the Control Group in Relation to Sex and Age

The composition of the three groups in relation to the sex and age of the members is presented in Table 1. As is illustrated here, twenty males and two females participated in the modular experiences, indicating 90.9 percent of the participants in the field tested were males. This compares with an 86.3 percent of experimental "Group B" who were males, and a 100 percent male population for the control group.

The data in the table indicated that the largest number of the participants (45.5 percent) who experienced the module were in the age group of 25-30; while the smallest number of participants (13.6 percent) were in the age group of 41-45. This compared with 36.4 percent of the experimental "Group B" being in the age group of 41-45, and 13.6 per-

TABLE 1

A COMPARISON OF THE COMPOSITION OF THE EXPERIMENTAL GROUPS WITH THE CONTROL GROUP IN RELATION TO SEX AND AGE.

	Experimental Group "A" (N=22)		Experimental Group "B" (N=22)		Control Group (N=22)	
Characteristics	No.	%	No.	%	No.	%
Sex:						
Male	20	90.9	19	86.3	22	100.0
Female	2	9.1	3	13.7	0	00.0
Age:						
25-30	10	45.5	5	22.7	8	36.4
31-35	4	18.2	6	27.3	7	31.8
36-40	5	22.7	3	13.6	4	18.2
41-45	3	13.6	8	36.4	3	13.6

cent between the ages of 36-40. Continuing with the control group, it is obvious that the majority of the control group (36.4 percent) were in the age group of 31-35; while the smallest number of participants (13.6 percent) were in the age group of 41-45. Approximately one-half of the members in all three groups were in an age group range of ten years (25-35).

The above findings indicate that the composition of the experimental groups is substantially different in that the age group majorities

were reversed. In experimental "Group A", 87 percent of the participants were 40 years of age or less, while in the experimental "Group B", 36 percent of the participants were over 40. The control group was much more evenly distributed showing 68.2 percent of the participants in the first two categories.

The Composition of the Experimental Groups Compared with the Control Group in Relation to the Present Position

The data presented in Table 2 illustrate the composition of the experimental groups and the control group as related to the present position of the members.

As illustrated by this data, the group participating in the module (experimental "Group A") was composed of eleven full-time graduate students, two elementary teachers, four secondary teachers, one secondary administrator, three central office administrators, and a college professor. The largest single group represented were full-time students, all registered with the Center for Leadership and Administration at the University of Massachusetts. This group of graduate students represented 50 percent of the experimental "Group A".

In experimental "Group B", the section on full-time students shows a nine member group, representing 40.9 percent of the total.

In the control group, the largest group represented were full-

TABLE 2

A COMPARISON OF THE COMPOSITION OF THE EXPERIMENTAL GROUPS WITH THE CONTROL GROUP IN RELATION TO PRESENT POSITION.

	Experimental Group "A" (N=22)		Experimental Group "B" (N=22)		Control Group (N=22)	
Characteristics	No.	%	No.	%	No.	%
Full-time Student	11	50.0	9	40.9	10	45.5
Elem. Teacher	2	9.1	4	18.1	2	9.1
Sec. Teacher	4	18.1	1	4.6	3	13.6
Total	6	27.2	5	22.7	5	22.7
Elem. Admin.	0	00.0	4	18.2	2	9.1
Sec. Admin.	1	4.6	1	4.6	0	00.0
Total	1	4.6	5	22.8	2	9.1
Central Office Adm	3	13.6	3	13.6	5	22.7
Other*	1	4.6	0	00.0	0	00.0

*College professor

time students (45.5 percent). Elementary and secondary administrators made up 9.1 percent of the control group. However there was an

overall administrative representation of 31.8 percent for the control group when viewing only the present positions as illustrated in Table 2.

The Composition of the Experimental Groups Compared with the Control Group in Relation to Position Held, Using Previous Position for Full-Time Students

The data presented in Table 3 are identical to the data presented in Table 2 with the exception of the full-time graduate student. It was felt that a great deal of valuable information could be gathered by using the statistics on the graduate student in his previous position. This data could provide a much clearer picture of the make-up of the students that were involved in the study. From this revision of the data, it was found that 54.5 percent of the participants in experimental "Group A" fit into the category of teacher. From the data gathered on experimental "Group B", 45.4 percent of the participants fell into the same category. Continuing with the members of the control group the data indicate that 45.4 percent of those participants also fit into the "teacher" category.

The Composition of the Experimental Groups with the Control Group in Relation to the Years of Experience in Administrative Positions

The data presented in Table 4 show the composition of the exper-

TABLE 3

A COMPARISON OF THE COMPOSITION OF THE EXPERIMENTAL GROUPS WITH THE CONTROL GROUP IN RELATION TO PREVIOUS POSITION HELD BY THE FULL-TIME GRADUATE STUDENT AND PRESENT POSITION OF OTHERS.

	Experimental Group "A" (N=22)		Experimental Group "B" (N=22)		Control Group (N=22)	
Characteristics	No.	%	No.	%	No.	%
Full-time Students						
Elem. Teachers	2	9.1	4	18.1	3	13.6
Sec. Teachers	10	45.4	6	27.3	7	31.8
Total	12	54.5	10	45.4	10	45.5
Elem. Admin.	2	9.1	4	18.2	3	13.6
Sec. Admin.	4	18.2	4	18.2	4	18.2
Total	6	27.3	8	36.4	7	31.8
Central Office Adm.	4	18.2	4	18.2	5	22.7

imental groups compared with the control group as related to the years of administrative experience of the members.

This information indicates that the largest number of members in the experimental "Group A" (40.9 percent) had no more than one year of administrative experience. While experimental "Group B"

TABLE 4

A COMPARISON OF THE COMPOSITION OF THE EXPERIMENTAL GROUPS WITH THE CONTROL GROUP IN RELATION TO THE NUMBER OF YEARS OF ADMINISTRATIVE EXPERIENCE.

	Experimental Group "A" (N=22)		Experimental Group "B" (N=22)		Control Group (N=22)	
Characteristics	No.	%	No.	%	No.	%
Number of years of Administrative Experience						
0 - 1	9	40.9	6	27.3	8	36.4
2 - 3	3	13.6	4	18.2	5	22.7
4 - 9	8	36.3	10	45.4	6	27.3
10 - 15	1	4.6	2	9.1	3	13.6
16 - Over	1	4.6	0	00.0	0	00.0

had 45.4 percent of its members who had between four and nine years of administrative experience. Eight members (36.4 percent) of the control group fell into the category of 0 - 1 year of administrative experience.

These data indicate that there was measurable difference in the composition of the three groups in relation to years of experience at

the administrative level. It is important to note that the data also point to an existing trend in American education. The classroom teacher, when given an opportunity to pursue an administrative career, usually discovers a void in his educational background and seeks "on-the-job" training from the universities to strengthen his leadership skills. Thus we have many participants who have had several years of administrative experience and are still working on an advanced degree in educational administration.

The Composition of the Experimental Groups Compared with the Control Group in Relation to the Setting of the School in Which the Member is Employed

The composition of both groups in relation to the setting of the school in which the member is employed is presented in Table 5.

The data in Table 5 indicate the largest number of members (54.5 percent) from either of the two experimental groups either teach, or have taught in a suburban setting, before becoming a full-time graduate student. Examining the control group, the data indicate that 45.4 percent of the participants are from a suburban setting.

The Composition of the Experimental Groups Compared with the Control Group in Relation to the Highest Academic Degree Held

In Table 6 are presented the data illustrating the composition of the

TABLE 5

A COMPARISON OF THE COMPOSITION OF THE EXPERIMENTAL GROUPS WITH THE CONTROL GROUP IN RELATION TO THE SETTING OF SCHOOL IN WHICH THE MEMBER IS EMPLOYED.

	Experimental Group "A" (N=22)		Experimental Group "B" (N=22)		Control Group (N=22)	
Characteristics	No.	%	No.	%	No.	%
Setting of School						
Urban	7	31.8	2	9.1	8	36.4
Suburban	12	54.6	12	54.5	10	45.4
Rural	3	13.6	8	36.4	4	18.2

two experimental groups and the control group in relation to the highest academic degree held by the member.

These data indicate that the majority of the members in all of the groups had their Masters degree plus additional academic credits. For the experimental "Group A", the number of members in this category was 14 (63.6 percent), experimental "Group B" had 13 members in this category representing 39.1 percent of the population. As for the control group, it was 14 members, or 63.6 percent of the group.

These data indicate that the three groups were equivalent in re-

TABLE 6

A COMPARISON OF THE COMPOSITION OF THE EXPERIMENTAL GROUPS WITH THE CONTROL GROUP IN RELATION TO THE HIGHEST ACADEMIC DEGREE HELD.

	Experimental Group "A" (N=22)		Experimental Group "B" (N=22)		Control Group (N=22)	
Characteristics	No.	%	No.	%	No.	%
Highest Degree Held						
Bachelors						
Bachelors +	1	4.6	5	22.7	2	9.1
Masters	6	27.2	3	13.6	4	18.2
Masters +	14	63.6	13	59.1	14	63.6
C.A.G.S.	0	00.0	1	4.6	2	9.1
Doctorate	1	4.6	0	00.0	0	00.0
Other						

lation to the highest degree held by the members.

Summary

In the previous subsections was presented a description of the composition of the experimental groups (the participants in the field

testing of the modular units and those participants from the classroom setting presentation) and the control group. From the data it appears there was a great deal of continuity in relation to the following characteristics; 1) sex, 2) age, 3) present position, 4) past position for the full-time graduate student, 5) number of years of administrative experience, 6) the setting of the school in which the member is employed, and 7) the highest academic degree held by the member. A copy of the questionnaire used in this study is found in Appendix A.

Methods of Gathering and Processing the Data

The following sections present the procedures for 1) presenting the data relating to the participants' attitude toward the two audio modular instructional units used in the study; and 2) presenting the data relating to the six criteria used to determine the suitability of the audio modular instructional approach.

The assessment procedures used in this study were based on the criteria established in the definition of suitability. These criteria, and the assessment procedures used for each criterion, are summarized in the following sections.

The Procedures Used for Presenting the Data Relating to the Participants' Attitude Toward the Two Audio Modular Instructional Units Used in This Study

The following subsections present the procedures used to measure the participants' attitude toward the two audio modular instructional units used in this study. The procedures used to gather this data are: 1) two open-ended questions designed to solicit from the participant his attitude toward the modular experiences; 2) a closed question designed to measure seven technical aspects related to the two modular units; and 3) five open-ended statements soliciting the participants' responses to the following: a) discussion questions, b) exercises, c) diagrams within the two modules, and d) the identification of one weakness and one strength that would possibly improve, or detract from the unit.

The Procedures Used to Obtain the Data Focusing on the Major Strengths and Weaknesses of the Two Modular Units

After each participant in "Group A" completed the audio modular instructional units, he was asked to respond to a number of questions on a written questionnaire. Two of these questions were open-ended and asked the respondents to identify a major weakness and major strength of the two audio modular instructional units used in this study.

The purpose was to determine the major strengths and weaknesses of the units as perceived by those students who had experienced this alternative approach to learning. The results of the data obtained from these two questions would provide information concerning the changes that could be made in the existing units. A sample of the two open-ended questions is presented in Figure 2.

The Procedure Used to Obtain the Data Focusing on the Participants' Perceptions Concerning the Technical Aspects of the Two Audio Modular Instructional Units

A single "closed" question was included in the questionnaire asking the participants to focus on the technical aspects of the two audio modular instructional units used in this study. The "closed" question incorporated seven parts, each soliciting a "ranked-order" response from one to five. A rating of one was considered "outstanding" while

3. What was the major strength of this specific audio instructional module?

4. What was the major weakness of this specific audio instructional module?

Figure 2—A sample of the open-ended questions soliciting the strengths and weaknesses of the two modular units used in this study.

five was "very poor". The results of the data obtained from the "closed" question would assist the investigator in determining the participants' attitude toward the audio modular approach as used in this study. A sample of the "closed" question focusing on the technical aspects of the audio modular instructional units is illustrated in Figure 3.

11. The following items focus on the technical aspects of the audio instructional module. Please circle the number at the right of the statement which best represents your evaluation of the particular aspect mentioned in the statement. Use the following scale:

    1. Outstanding
    2. Good
    3. Average
    4. Needs improvement
    5. Very poor

a) The general appearance of the module 1 2 3 4 5

b) The clarity of the module instructions 1 2 3 4 5

c) The statement of objectives 1 2 3 4 5

d) The appearance of the pages in the text 1 2 3 4 5

e) The quality of the casette tape 1 2 3 4 5

f) The synchronization between tape and text. . . . 1 2 3 4 5

g) The ease and convenience with which the material can be utilized 1 2 3 4 5

Figure 3—A sample of the "closed" question used in the study, focusing on the technical aspects of the audio modular units.

The Procedures Used to Obtain the Data Focused on the Possible Changes Which Could be Made in the Two Modular Units Used in This Study

In this subsection, five open-ended statements are presented. Three of these statements were used in an attempt to solicit participant reaction to the discussion questions, the exercises, and the diagrams that were used throughout the audio modular units. Two additional open-ended statements were incorporated in this section to solicit the participants' identification of one major weakness and one strength in the audio modular units just completed.

Discussion questions were used throughout the two audio modular instructional units for the purpose of clarification. In the first modular unit the participant was constantly being asked questions or presented situations he was encouraged to react toward. In the second modular unit, the participant was encouraged to discuss several leadership situations with his team members, or to react to given leaderless situations. These were the items that the participants were encouraged to "rate" under the open-ended statement referring to the discussion questions used in the units.

The exercises connected with the first module were two-fold. First, the participant was asked to complete two different questionnaires which would give him a "feeling" for his own style of leader-

ship. Secondly, he was asked to have a third questionnaire completed by his subordinates. This third form was designed to show how others perceived his style of leadership. The exercise in the second modular unit was in the form of a simulation game. The participants competed against each other in a simulation game designed to test their styles of leadership. These were the exercises in the two audio modular units that the participant was to "rate" when answering the open-ended statement related to exercises.

Both audio modular units incorporated the use of diagrams to further clarify new ideas and concepts being introduced by the tape presentation. As the participant was listening to the tape presentation, he could view a diagram or chart designed for further clarification. These charts and diagrams represented items the participant must keep in mind when filling out the open-ended statements.

To further solicit responses concerning possible changes that could be made in the instructional modules, the participant was asked to react to two open-ended statements. The first question elicited the one "stand-out" weakness within the module. The second elicited reaction to the strongest or most influential part of the instructional unit. A sample of the five open-ended statements used in this subsection of the study are presented in Figure 4.

12. Complete the following statements:

a) The discussion questions in this module_____

_____

b) The exercises, connected to the module, which I participated in_____

c) The diagrams in this module_____

_____

d) One change that I would make in this module_____

_____

e) One aspect of this module which should definitely remain the same_____

Figure 4—A sample of the "open-ended" statements soliciting additional information about the audio modular units.

The Procedures Used to Present the Data Relating to the Six Criteria Used to Determine the Suitability of the Audio Modular Instructional Approach

In the previous section the methods for gathering the data relating to the participants' attitude toward the two units used in the study were presented. In this section are presented the methods for gathering the data relating to the six criteria used for determining the suitability of the audio modular instructional approach as one alternative pre-service instructional approach for the training of school

administrators.

Each of the following subsections correlate with the six criteria used to measure suitability. The questions and statements arranged under each subheading will be used in an attempt to support the particular criteria it relates to in the definition of suitability, as it was defined operationally in Chapter I.

The Procedures Used to Measure the Responses Relating to the Participants' Interest in the Experience and Their Motivation as a Result of the Experience

The participants' interest toward their experience with the audio modular instructional units and their motivation as a result of experiencing the units were determined through the use of five "closed" questions on a written questionnaire. These questions were focused on the following concerns: 1) the degree to which the experience with the audio modular instructional units was interesting to the participant; 2) the degree to which the experience with the units was of value to the participants' own learning; 3) the degree to which participating in the units was perceived as being worth the amount of time spent on completing them; 4) the degree to which the participant felt he would have subjected himself to the modular experiences if he had had the choice; and 5) the degree to which the participant is excited about recommending to other persons that they should participate in

the audio modular instructional units. Each of these five critical areas are addressed through the participants' response to the following five "closed" statements. A sample of the questions relating to the interest and motivation factor as defined within the framework of suitability is presented in Figure 5.

The Procedures Used to Measure the Data Relating to the Perceived Worth of the Experience, as Compared to Alternative Experiences

In the previous section the procedures were presented relating to the participants' interest in their experience with the two audio modular instructional units, and their motivation as a result of this experience. In the present section the procedures are presented relating to the perceived worth of the experience with the audio modular instructional approach as compared to alternative pre-service instructional approaches for the training of school administrators.

This section includes two parts: 1) the procedures used to determine the participants' choice of alternative instructional approaches as opposed to the two audio modular instructional units; and 2) the procedures used to determine the participants' order of preference of alternative instructional approaches as compared to the audio modular instructional approach to learning.

Two open-ended questions were used to obtain data supporting the

1. I found participating in the audio instructional module:

_____a) very interesting.

_____b) somewhat interesting.

_____c) somewhat boring.

_____d) very boring.

2. I found participating in the audio instructional module:

_____a) a very valuable learning experience.

_____b) a learning experience of some value.

_____c) an experience which is neither valuable nor worthless as far as my own learning.

_____d) an experience somewhat worthless.

_____e) an experience which was completely worthless.

6. I feel that the experience I gained from participating in this module

_____a) was definitely worth this amount of time.

_____b) was probably worth this amount of time.

_____c) may or may not have been worth the time.

_____d) was probably not worth this amount of time.

_____e) was definitely not worth this amount of time.

8. Now that I know what the module is like, if I had the choice I would

_____a) have definitely participated in the module.

_____b) have probably participated in the module.

_____c) not know whether I would or would not have participated in the module.

_____d) have probably not participated in the module.

_____e) have definitely not participated in the module.

9. How excited would you be in recommending to a fellow student that he/she participate in this module?

_____a) very excited.

_____b) somewhat excited.

_____c) no feeling either way.

_____d) would be reluctant to recommend it.

_____e) definitely would not recommend it.

Figure 5—A sample of the "closed" questions relating to the interest and motivation factor as defined within the framework for suitability.

participants' choice of alternative instructional approaches. The first open-ended question asked the participant to briefly state what he felt he had learned from participating in the audio modular instructional units used in this study. The second question asked the participant to respond to the open-ended question: "What other existing instructional methods would you have preferred to participate in, in order to learn this?"

The procedures used to determine the participants' order of preference of alternative instructional approaches was accomplished through the use of a closed question, asking the participant to rank-order six different alternatives commonly used in the training of the school administrator. Additional blanks were provided at the bottom of the table, and the participants were encouraged to add additional learning procedures. In this assignment approach, an effort was made to move beyond a specific reference to the two audio modular instructional units, and toward a broader reference, that of the audio modular instructional approach as a general concept. To do this the participants were asked to rank-order the list of six pre-service approaches according to their order of preference. The reference to the audio modular instructional unit approach was included in the list. A sample of the two open-ended questions and the one "closed" question used to measure the data relating to the perceived worth of the

experience, as compared to alternative experiences, is located in Figure 6.

10. Briefly state what you feel you have learned from this module.

What other existing instructional method would you have preferred to participate in, in order to learn this?

14. Suppose you were given the option to participate in the following pre-service educational programs. Assuming they would be somewhat equal in time commitment, rank the following approaches in the order of your preference. Start with the number (1) for your highest preference; number (2) as second, and so on.

_____a) attend a seminar where the material is presented in lecture form.

_____b) participate in a course where the material in question is presented sometime within the context of the course.

_____c) purchase a professional book and read it.

_____d) visit schools to observe leaders in action.

_____e) participate in an audio modular instructional unit.

_____f) discover the material through independent study.

(Below, add any additional pre-service educational program approaches you might choose as one alternative approach to concept learning)

_____g) _____

_____h) _____

Figure 6—A sample of the questions used to measure the "worth" factor as defined for the suitability concept.

The data generated by this question were processed in two different ways. The first method was to simply count the number of times each approach was assigned a certain value. The second method was to assign numerical values to each response, and then determine the weighted mean score for the group for each item listed. The numerical values that were assigned are presented in Figure 7 (the lowest total score being the most desirable alternative).

The second technique used was the use of a semantic differential scale. This process is discussed in the following section.

Rank Order	Numerical Value Assigned
1	1
2	2
2	3
4	4
5	5
6	6

Figure 7—The numerical values assigned to the rank given each item from question number 14.

The Procedures Used for Determining the Connotative Meaning of the Experience

In a further attempt to move toward a broader perspective on the audio modular instructional approach as a concept, the participants were asked to react to a semantic differential scale for determining the connotative meaning of the concept, "Audio Modular Instruction as One Alternative Approach for Pre-Service Education for School Administrators." The participants were also asked to respond to a second concept on a second semantic differential, using the same polar traits. The second concept was: "Pre-service Educational Programs for Administrators in which you have participated (excluding the audio modular instructional approach, but including course work and other learning experiences)." The response patterns on the semantic differential scale included: 1) polar traits relating to the factors of evaluation, potency, and activity; and 2) the polar traits signifying the degree to which the concept is thoughtful, open, promising, useful, meaningful, successful and interesting.

To determine the polar traits needed within the context of the semantic differential, this investigator referred to Osgood, Suci and Tannenbaum.[1] According to Osgood, the scales having the purest

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[1]Charles E. Osgood, George J. Suci, and Percy H. Tannenbaum, The Measurement of Meaning (University of Illinois Press, 1971) pp. 52-63.

loading on the evaluative factor are good-bad, optimistic-pessimistic, complete-incomplete, timely-untimely, all of which were incorporated in the semantic differential used in this study plus pleasant-unpleasant. This gave the investigator five polar traits to incorporate under the evaluative factor.

For the potency factor, this investigator chose three polar traits. These three traits were: potent-impotent, free-constraining, and permissive-prohibitive. For the activity factor, two polar traits were used. These traits were: active-passive, and simple-complex.

The mean polarity scores for each of the two concepts being tested were determined for the three factors, plus the six individual traits. The differences in the mean polarity scores for the two concepts were subjected to a statistical analysis of variance to determine if the difference in these scores reached a statistical level of significance. This statistical analysis was calculated for each of the three factors and for each of the individual polar traits for which mean polarity scores were determined. The format of the scales and the polar traits are presented in Figure 8.

Polarity differences were analyzed by assigning values to the possible response positions as illustrated below.

Good : 6 : : 5 : : 4 : : 3 : : 2 : : 1 : : 0 : Bad

AUDIO MODULAR INSTRUCTION AS ONE ALTERNATIVE APPROACH FOR PRE-SERVICE EDUCATION FOR SCHOOL ADMINISTRATORS
(CONCEPT)

Good	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Bad
Potent	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Impotent
Pessimistic	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Optimistic
Incomplete	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Complete
Unsuccessful	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Successful
Meaningless	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Meaningful
Passive	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Active
Useful	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Useless
Untimely	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Timely
Pleasant	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Unpleasant
Comfortable	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Uncomfortable
Promising	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Disappointing

PRE-SERVICE EDUCATIONAL PROGRAMS FOR ADMINISTRATORS IN WHICH YOU HAVE PARTICIPATED (EXCLUDING THE AUDIO MODULAR INSTRUCTIONAL APPROACH, BUT INCLUDING COURSE WORK AND OTHER LEARNING EXPERIENCES)
(CONCEPT)

Good	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Bad
Potent	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Impotent
Pessimistic	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Optimistic
Incomplete	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Complete
Unsuccessful	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Successful
Meaningless	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Meaningful
Passive	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Active
Useful	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Useless
Untimely	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Timely
Pleasant	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Unpleasant
Comfortable	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Uncomfortable
Promising	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Disappointing

Figure 8—A sample of the items illustrating the format for the two semantic differentials soliciting the comparison of the connotative meaning.

The Procedures Used to Determine the Cognitive Change that Takes Place in the Individual as a Result of Participating in the Experience

The posttest-only nonequivalent control group quasi-experimental design was used in an attempt to determine the cognitive changes which may have occurred as a result of participating in the audio modular instructional units.

A concept clarification test was adopted for each of the two modules tested. These tests had been designed to measure the participants' achievement on the material presented. The tests were previously used by Dr. Ken Blanchard in his formal class designed to teach the "Life Cycle Theory" to students of school administration. Because the items on the test had been used for several previous classes, it was felt that a formal validation process of the test instrument was unnecessary. With the help of Dr. Blanchard, the concept clarification test was reduced to the most meaningful 28 questions. It was this 28 question instrument that was administered to "Group A" following their participation in the audio modular instructional units; to "Group B" following their participation in the "live" classroom presentations where Dr. Blanchard presented the "Life Cycle Theory" material; and to "Group C" consisting of students who had never been exposed to material dealing with the "Life Cycle Theory." The mean

scores were calculated separately for the three groups. The difference in the mean scores among the three groups was subjected to a statistical analysis of variance to determine if the difference in the mean scores reached a statistical level of significance. The sample questions illustrating the format for the 28-question achievement test is presented in Figure 9.

The Procedures Used to Measure the Potential for Further Development of Learning Experiences Utilizing the Same Instructional Approach

In an attempt to measure the attitude of the 22 participants that had been through a modular experience, seven open-ended questions or statements were included in the evaluation questionnaire given to the students upon completion of their modular experience.

The seven questions or statements involved in this section of the study were broken into four categories: 1) the potential for determining the results of the two open-ended statements soliciting the major strengths and weaknesses of the audio modular approach; 2) the potential for determining the results of the two open-ended statements soliciting the conditions under which the participant would participate in further modules; 3) the potential for determining the results of the two open-ended statements asking the participants for skills and topics that could be incorporated in further modular unit

8. The four effective and the four ineffective leader behavior styles are in essence

_____a) a measure of a leader's performance

_____b) the intervening variables which reflect the current conditions of the internal state of the organization

_____c) measured by production or output

_____d) how appropriate a leader's basic style is to a given situation as seen by his followers, supervisors and associates

_____e) how they are perceived by superiors

9. A leader with a wide range of behavioral style (adaptability)

_____a) is an effective leader

_____b) to be effective must diagnose the needs of the situation

_____c) to be effective must be able to change his style

_____d) to be effective must be able to adapt his behavioral style to the needs of the situation

_____e) may be an ineffective leader

10. Leaders whose behavior is observed to be at the authoritarian end of the continuum tend to be

_____a) high task-high consideration oriented

_____b) group-oriented

_____c) task-oriented

_____d) laissez-faire oriented

_____e) none of the above

11. Of the five categories listed on the Managerial Grid, which one of the following does not belong

_____a) country club

_____b) team

_____c) self-initiated

_____d) impoverished

_____e) middle of the road

Figure 9—Sample questions illustrating the format for the 28-question achievement test administered to all participants.

development; and 4) the results of a single open-ended statement requesting the conditions that must be considered before additional modules can be developed.

At this point the student was asked to recall his experience with the audio modular instructional units he had just completed and relate that experience to past learning experiences. In doing this, the participant was asked to identify one major strength and one major weakness of the audio modular instruction as an alternative approach to learning.

Secondly, the participant was again asked to recall his experience with the audio modular instructional units and to identify specific conditions that must be met in order for him to participate in additional modular units.

Third, the participant was asked to identify those skills he felt could be learned through a modular presentation. Following that, the participant was asked to identify specific topics which could be adopted for use with the modular instructional approach to learning.

Finally, the participant was asked a single open-ended statement requesting the conditions that must be met before additional topics can be developed.

All of the above seven questions or statements have potential influence on the data gathered to measure the potential for further de-

velopment of learning experiences utilizing the same instructional approach. The data from these questions were categorized and presented in the form of the number and percentage of responses made for each category. The questions used to solicit each of the above mentioned responses are presented in Figure 10.

The Procedures Used to Measure the Time and Money Factors Involved in the Development of the Audio Modular Instructional Units

In an attempt to measure the time and money factors related to the two audio modules used in this study, this investigator kept a log for recording data related to the units. The records available for the expenses involved in the construction of the two modules are extremely accurate. Every item purchased for use in the construction of the modular units was recorded. At the completion point of the modular units the expense figure was divided by 10 which gave a per unit cost of the modular unit. This procedure was used for the construction of the twenty modules used in this study, although there were only two different modules constructed. Each modular unit used in this study had the original and nine copies for circulation.

Similar attempts were used to measure the time factor that was under consideration during the construction of the modular units. This approach met limited success. The overlapping agendas that

15. The major strengths of the audio modular instructional approach as a pre-service technique are:

16. The major weaknesses of the audio modular instructional approach as a pre-service technique are:

17. Please complete the following statements:

    a) I would spend time participating in an audio modular instructional unit only if_____

    _____

    b) I would definitely not spend time participating in an audio instructional unit if_____

    _____

    c) For any one to develop any more audio modular instructional units would_____

    _____

18. What kind of skills and knowledge do you think could be learned through the use of audio modular instruction?

19. What additional topics might be adopted to audio modular instruction?

Figure 10—A sample of the questions used to determine the potential for further development of learning experiences using the same instructional approach.

seem to always exist made it extremely difficult to keep accurate account of the time factor. However, presented in Chapter V of this study are the results of the procedures used to measure the factors. In the case of the time factor, every person connected with the planning and development of these modules had a time agenda that was figured in on the total time spent for the development of the audio modular instructional units.

Summary

The assessment procedures described in this section were based on the criteria established in the definition of suitability.

In this section, each criterion was set forth along with those questions from the questionnaire designed to measure the specific criterion within the definition of suitability. An explanation of the procedures used in the analysis of the data was also presented. In the following chapter, the data generated from these procedures are presented and analyzed.

CHAPTER V

PRESENTATION AND ANALYSIS OF THE FINDINGS

The major task of the present study was to determine the suitability of utilizing the audio modular instructional approach as one alternative pre-service training technique for presenting selected concepts and skills to students of school administration enrolled in the graduate program in the School of Education, University of Massachusetts. In the previous chapter a description of the study population, and the methods for gathering and analyzing the data were presented.

In the present chapter the data are presented and analyzed. This chapter includes two major sections: 1) the results from the data relating to the participants' attitude toward the two audio modular instructional units used in the study; and 2) the results from the data relating to the six criteria used for determining the suitability of the audio modular instructional approach.

The Results from the Data Relating to the Participants' Attitude Toward the Two Audio Modular Instructional Units Used in the Study

In the following sections an analysis will be made of the data relating to the participants' attitudes toward the two audio modular instructional units used in this study. The procedures used to gather this data are: 1) two open-ended questions designed to solicit from

the participant his attitude toward the modular experiences by identifying the strengths and weaknesses, as he sees them, that exist in the two modular instructional units; 2) a closed question designed to measure seven technical aspects related to the two modular units; and 3) five open-ended statements soliciting the participants' responses to the following: 1) discussion questions within the two modules, as well as the identification of one weakness and one strength that would possibly improve, or detract from the unit if altered, 2) exercises, and 3) diagrams.

The following sections present the data obtained from the categorization of the responses. These data are presented in the form of eight tables. Each table is identified and analyzed. Following the presentation of the tables is a summary which relates to the initial suitability criteria soliciting participants' attitudes toward the two audio modular instructional units used in this study.

Results from the Data Focusing on the Major Strengths and Weaknesses of the Two Modular Units

Two "open-ended" questions were included in the 28-item questionnaire administered to the individuals who participated in the two audio modular instructional units. The purpose of these questions was to determine the major strengths and weaknesses of each specific

audio modular instructional unit. The results of the two questions related to the strengths and weaknesses are found in Tables 7 and 8.

Table 7 has categorized the responses solicited by the open-ended question, "What was the major strength of this specific audio modular unit?" There were 45 responses made by the 22 participants. Seven participants (15.6 percent) felt the major strength of the units must lie in the opportunity to explore and determine one's own style of leadership. An additional six persons (13.3 percent) felt the involvement in the learning experience was a major strength. Another five students (11.1 percent) liked the immediate feedback and reinforcement sections that were built into the two modular units. Others identified additional personal preferences such as: ease of use, unique approach to learning, direct and concise, individualized, and several others. In all, there were 13 specific strengths identified by the 22 participants.

On the basis of the information supplied by the participants for this table, it is difficult for the investigator to draw any meaningful conclusions. Forty percent of the responses do lie in the first three categories, but a 15.6 percent majority does not provide conclusive evidence for any one item.

In Table 8 the participants were asked to respond to the open-ended statement soliciting weaknesses from the two specific modules used in the study. Thirty-five responses were generated by the 22

Table 7

WHAT WAS THE MAJOR STRENGTH OF THIS SPECIFIC AUDIO MODULAR INSTRUCTIONAL UNIT?

Categories	Number and Percent of responses made in each category (N=22)	
	No.	%
Opportunity to explore and determine my own style of leadership	7	15.6
Involvement in the learning experience	6	13.3
Reinforcement and direct feedback	5	11.1
The ease of use—work at own pace	4	8.9
The orchestration of tape, materials and diagrams	4	8.9
Unique approach to learning	3	6.7
A participatory learning exercise	3	6.7
Amount of material that was synthesized and presented	3	6.7
Direct and concise	3	6.7
The individuality of the module	2	4.4
Self-evaluation mechanism built into the module itself	2	4.4
Well organized	2	4.4
The logic of the instruction that was presented	1	2.2
	45	100.0

TABLE 8

WHAT WERE THE MAJOR WEAKNESSES OF THIS SPECIFIC AUDIO MODULAR INSTRUCTIONAL UNIT?

Categories	Number and Percent of responses made in each category (N=22)	
	No.	%
None that I was aware of	19	54.4
Lack of personal interaction	3	8.6
The first module ended without any "sign-off" leaving you hanging	2	5.8
The tape summary was a bit long	2	5.8
Too much talk in the beginning of the second modular unit	2	5.8
A minor editing error was overlooked on the first modular unit tape	1	2.8
The first module needed more color to encourage more participation	1	2.8
More explanation needed on game choices for the second unit	1	2.8
Questions seemed too easy	1	2.8
Had to replay tape once or twice to clarify some points	1	2.8
Question the necessity of the charts in the second module	1	2.8
Female voice in the second module was not as good as the two male voices in the first modular presentation	1	2.8
	35	100.0

participants. Of the 35 responses, 19 (54.4 percent) were from participants who could not detect any weakness in the two units. Several of the participants who said they could not detect a weakness would continue with a statement such as: "...but, the first tape had no 'sign-off' ending, therefore I was left hanging." Or "...but the female voice was not as good as the male voice." If this was done, both reactions were recorded.

Of the remaining eleven weaknesses identified by the participants, one weakness was supported by three responses; three more weaknesses were supported by two responses each; and the remaining seven weaknesses were identified by a single response.

Many of the weaknesses identified on the table were also identified in the initial testing of the first unit and were corrected for the second packet. This specifically relates to such points as: 1) no "sign-off," 2) lack of personal interaction, 3) editing error in first tape, and 4) tape summary was too long.

Given the opportunity to identify weaknesses in the units, 54.4 percent of the respondents chose to write that there were "...none that I was aware of." Therefore it may be concluded that more than one-half of the participants felt there were no major weaknesses in the audio modular units.

Whereas the table soliciting the strengths of the two units could

not identify any conclusive evidence supporting a given strength, the weakness table did offer some conclusions: 1) more than one-half of the responses failed to identify any weaknesses in the two units; and 2) seven of the remaining eleven weaknesses identified were identified by a single response.

An analysis of the data presented in the two tables would indicate a lack of any specific strength as well as the lack of any specific weakness. Utilizing the two open-ended questions as described, it is impossible to draw any firm conclusions regarding the strengths and weaknesses of the two modular units used in this study.

Results of the Data Concerning Participant Perceptions of the Technical Aspects of the Two Units

In the questionnaire, a single "closed" question was incorporated to obtain reactions to participants' perceptions of the technical aspects of the modular instructional units. These data are provided in Table 9.

As the information on this table indicates, more than 90 percent of the participants have responded in a positive direction on each technical aspect listed. More than 59 percent of the participants gave the seven categories an outstanding rating. The two "below average" responses were on: "the quality of the cassette tape," and the "synchro-

TABLE 9

RESULTS OF THE RESPONSE TO THE TECHNICAL ASPECTS OF THE AUDIO MODULAR PACKETS

	Response Pattern and Number of Responses made (N=22)									
	Outstanding		Good		Average		Needs Improving		Very Poor	
Technical Aspects	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)
General appearance of the modules	17	77.3	5	22.7	0	00.0	0	00.0	0	00.0
Clarity of the modular instruction	13	59.1	7	31.8	2	09.1	0	00.0	0	00.0
Statement of objectives	14	63.6	7	31.8	1	04.6	0	00.0	0	00.0
Appearance of the pages in the text	15	68.2	7	31.8	0	00.0	0	00.0	0	00.0
Synchronization between tape and text	15	68.2	6	27.2	0	00.0	1	04.6	0	00.0
Ease and convenience with which the material can be utilized	17	77.3	5	22.7	0	00.0	0	00.0	0	00.0
Quality of the tape	14	63.6	7	31.8	0	00.0	1	04.6	0	00.0

nization between tape and text." The aspects which appear to have had the most favorable response are the ones concerned with "the general appearance of the module" and "the ease and convenience with which the material can be utilized." On these two aspects, both received an outstanding rating from 77.3 percent of the participants. This percentage represented 17 of the 22 participants. The remaining five participants in each of the two categories rated these items as "good".

As indicated by the data, no less than 59 percent of the participants failed to give any of the technical aspect items less than an "outstanding" rating. Almost 91 percent of the participants rated the seven technical aspects as "above average". Of significance are those average or less than average ratings. In the five instances where the technical aspects received these ratings, minor adjustments in the modules could correct the concerns.

Results from the Data Indicating Possible Changes Which Could be Made in the Two Modular Units

In the following section, five open-ended statements are presented and analyzed as they pertain to the data gathered on the possible changes that could be made in the audio modular instructional units that were used for this study. Participant responses have been categorized and are reported in Tables 10 through 14.

Results of the Categorization of the Responses to the Open-ended Statement, "The Discussion Questions in This Module....."

Throughout the modular presentations, the participants were constantly involved in some form of activity. In many instances, this activity was in the form of discussion questions where the participants were encouraged to interact with one another for the purpose of clarifying specific ideas or concepts. Table 10 presents the data obtained by categorizing the responses to the open-ended statement used to obtain reactions to the discussion questions which were used in this particular study.

Eight different responses were generated from the 22 participants. Sixty-three percent of the responses fell in the first four statements. Twenty-seven percent of the participants felt that the questions were quite meaningful. Eighteen percent felt they provided a valuable learning experience. Thirteen percent felt as though the questions were well stated, while an additional 13 percent felt they were very good. Two participants felt the questions were somewhat unclear at times.

From these data it appears the questions used in the discussion throughout the units were meaningful and of some value for most of the participants, thereby promoting the worth of the discussion questions within the two modules.

TABLE 10

RESULTS OF THE CATEGORIZATION OF THE RESPONSES TO THE OPEN-ENDED STATEMENT, "THE DISCUSSION QUESTIONS IN THIS MODULE...."

Categories	Number and Percent of responses made in each category (N=22)	
	Number of responses made	Percent of responses made
were quite meaningful	6	27.3
provided a valuable learning experience	4	18.3
were well stated	3	13.6
were very good	3	13.6
somewhat unclear at times	2	9.1
provided clarification	2	9.1
assisted in putting information in my perspective	1	4.5
represented circumstances which existed	1	4.5
	22	100.0

Results of the Categorization of the Open-ended Statement, "The Exercises Connected to the Module Which I Participated in..."

Each modular instructional unit had one or more exercises connected with it. Depending on the module being used, each participant was instructed either to complete a self-analysis which would give an indication of his leadership style, or was instructed to turn off the tape recorder and participate in a competitive simulation game designed to test the participants' style of leadership. In each case, the exercises connected with the instructional modules consumed approximately one-half of the entire time that was committed to the instructional unit. Table 11 presents the categorization of the responses to the open-ended statement soliciting participant reaction to the exercises connected to the units.

From these data 73 percent of the responses were reported in the first three categories. These three categories were: 1) interesting (41.1 percent), 2) great (18.3 percent), 3) very worth while (13.6 percent).

There were no negative reactions expressed toward the exercises used in this study. From these data it appears as though the exercises were quite well received by the 22 participants that had the opportunity to go through the two audio modular instructional units.

TABLE 11

RESULTS OF THE CATEGORIZATION OF THE RESPONSES TO THE OPEN-ENDED STATEMENT, "THE EXERCISES CONNECTED TO THE MODULES WHICH I PARTICIPATED IN....."

Categories	Number and Percent of responses made in each category (N=22)	
	No.	%
were interesting	9	41.1
were great	4	18.3
were very worth while	3	13.6
were stimulating and helpful	1	4.5
allowed me freedom to exercise my decisions	1	4.5
were well coordinated	1	4.5
were helpful in clarifying the theory	1	4.5
center around school problems	1	4.5
personally interesting and informative	1	4.5
	22	100.0

The participants seemed to feel that the exercises were of intrinsic value.

Results of the Categorization of the Responses to the Open-ended Statement, "The Diagrams in This Module..."

Diagrams were included in both of the audio modular instructional packets for the purpose of clarification. These diagrams were used in connection with the narration on the tape presentation. As the participant was introduced to new concepts, he was often referred to a diagram in the guidebook which pictorially helped clarify the new concept. Table 12 represents the categorization of the responses solicited from the participants with reference to their opinion of the diagrams included in the units.

Six participants (27.2 percent) felt the diagrams were excellent and easy to follow. An additional five participants (22.6 percent) said the diagrams were very clear and well defined. Another four persons (18.2 percent) felt the diagrams were helpful. Two persons (9.1 percent) felt the diagrams were unnecessary. One other person felt the diagrams were confusing, while another person felt the diagrams needed more color.

As more than 90 percent of the respondents were positive regard-

TABLE 12

RESULTS OF THE CATEGORIZATION OF THE RESPONSES TO THE OPEN-ENDED STATEMENT, "THE DIAGRAMS IN THIS MODULE..."

Categories	Number and Percent of responses made in each category (N=22)	
	No.	%
were excellent and easy to follow	6	27.2
were very clear and well defined	5	22.6
helpful	4	18.2
adequate	2	9.1
not necessary	2	9.1
very valuable	1	4.6
confusing	1	4.6
needed more color	1	4.6
	22	100.0

ing the diagrams, it may be determined from these data that the diagrams were at least adequate.

Results of the Categorization of the Responses to the Open-ended Statement, "One Aspect of This Module Which Should Definitely Remain the Same...."

The purpose of this open-ended statement was to elicit participants' reactions to the strongest or most influential part of the instructional unit. Table 13 presents the categorization of these data.

Seven participants (31.9 percent) felt as though the strongest aspect within the two units was the simulation game and therefore it must remain unchanged. An additional seven participants (31.9 percent) felt there was nothing that could be removed from the unit without altering its effectiveness. Therefore these seven participants felt that all parts must remain intact. Four participants indicated that the questions used for self-analysis represented the strength of the unit, and therefore must remain unchanged. Four additional strengths were identified by the participants, each receiving one response. Seven areas were identified as having to remain the same.

From these data, it is apparent that 31.9 percent of the participants felt that the strength of the modules was the modules in their entirety. An additional 31.9 percent felt the simulation game was the strength of the units. There can be no conclusive statements made

TABLE 13

RESULTS OF THE CATEGORIZATION OF THE RESPONSES TO THE OPEN-ENDED STATEMENT, "ONE ASPECT OF THIS MODULE WHICH SHOULD DEFINITELY REMAIN THE SAME....."

	Number and Percent of responses made in each category (N=22)	
Categories	Number of responses made	Percent of responses made
the simulation game	7	31.9
all parts	7	31.9
use of questions for self-analysis	4	18.2
organization leading up to final objective of the module	1	4.5
the alternative choices available	1	4.5
tape presentation	1	4.5
the attractiveness of the packets	1	4.5
	22	100.0

from these data. However it does appear that the simulation game was well received.

Results of the Categorization of the Responses to the Open-ended Statement, "One Possible Change That I Would Make in This Module..."

One additional attempt was made to induce the participant to think in terms of "variation" or "improvement". The participant was asked to react to the open-ended statement which solicited from him one change that he would make in the modules just completed. The results of this categorization are presented in Table 14.

Of the 22 participants responding to the statement, seven (32.0 percent) felt there were no changes that could be made. Two persons said, "cut some of the end summary"; two persons said "eliminate the diagrams"; two persons said, "add more action cards to the simulation game". Another two participants felt that the managerial grid could be eliminated without changing the intent of the module. In all, there were eleven possible changes introduced. Only one of these statements received more than two responses. Five possible change statements were reacted to by two persons each and five statements were introduced by a single individual. Once again, it is extremely difficult to draw definitive conclusions. One might state that one-third of the participants were in favor of making no changes in the

TABLE 14

RESULTS OF THE CATEGORIZATION OF THE RESPONSES TO THE OPEN-ENDED STATEMENT, "ONE POSSIBLE CHANGE THAT I WOULD MAKE IN THIS MODULE....."

Categories	Number and Percent of responses made in each category (N=22)	
	Number of responses made	Percent of responses made
none	7	32.0
eliminate diagrams	2	9.1
cut some of the end summary	2	9.1
add more action cards to the game	2	9.1
eliminate the managerial grid	2	9.1
eliminate some preliminary remarks	2	9.1
a comparison between the two modules	1	4.5
slow down pace of tapes	1	4.5
reduce time commitment	1	4.5
begin tape with music	1	4.5
eliminate lady narrator	1	4.5
	22	100.0

modules. On the other hand, two-thirds of the participants could see some possibilities for change. The importance of Table 14 is that it may provide suggestions for incorporation when constructing additional modular units.

Summary

In this section an analysis was made of the data relating to the participants' attitude toward the two audio modular instructional units used in this study. Three questions, one "closed" and two "open-ended," were used along with five open-ended statements to gather these data.

The participants were asked to list the strengths and weaknesses of the audio modular units that were used for this study. The participant was also asked to react to seven technical aspects of the units, and to rank these technical aspects from "outstanding" to "very poor". The open-ended statements were designed to give the investigator detailed information on specific aspects of the instructional units used in the study.

From the two open-ended questions soliciting strengths and weaknesses of the two audio modular units used in this study, it is apparent that the 45 responses, identifying thirteen strengths, do not have a single strength soliciting more than 15.6 percent of the responses.

From the table soliciting weaknesses in the units, 54.4 percent of the participants felt there were no obvious weaknesses in the two units used in the study.

The data relating to the technical aspects of the audio modular instructional units was much more conclusive. More than 59 percent of the participants ranked the seven technical aspects as "outstanding". An additional check of the data showed that more than 90 percent of all participants had the seven technical aspects ranked above average. These data tend to indicate that the audio modular instructional units were technically well accepted by the participants.

Five open-ended statements were used in an attempt to further clarify some points of concern within the audio modular units. From the open-ended statement soliciting reaction toward the discussion questions incorporated in the module, came a good deal of support. More than three-fourths of the participants were supportive of the discussion questions and felt they were meaningful and of some value.

The exercises used in the audio modular units met with similar support. Again, three-fourths of the participants felt that the exercises were interesting and worthwhile.

The diagrams, although well supported by the participants, were not as well received as the exercises and the discussion questions. More than 60 percent of the participants did support the diagrams and

felt they were helpful.

The final two statements were designed to elicit participant reaction in terms of "variation and improvement" and unalterable strengths. From the statement which asked the student to identify the one item that should remain the same, seven areas were identified. Of these seven areas, 31.9 percent of the participants felt that the strength of the audio modular instructional units used in this study must lie in the simulation game, therefore it must remain intact. An additional 31.9 percent of the participants felt that the entire units were so refined that any alteration would disrupt the balance, therefore no changes should be made. An additional 18.2 percent of the participants felt that the questions used in the self-analysis section of the units should not be altered.

Data analyzed from the possible change table indicate that 32 percent of the participants felt there were no changes that could be made. This figure does coincide with the "no change" figure of Table 14. There were ten additional areas identified, five receiving two responses, and five receiving one response. Once again it would appear to the investigator that one-third of the participants were in favor of leaving the modules intact while an additional two-thirds had various suggestions for improving the units. As pointed out earlier, the analysis of the data presented in these tables would help to im-

prove future modules, but has contributed very little in an attempt to analyze these units.

The Results from the Data Relating to the Six Criteria Used for Determining the Suitability of the Audio Modular Instructional Approach

In the previous section the results from the data relating to the participants' attitude toward the two units which were used in the study were analyzed. In this section are presented the results from the data relating to the six criteria used for determining the suitability of the audio modular instructional approach as one alternative pre-service instructional approach for the training of school administrators.

The following subsections correlate with these six criteria, these being: 1) the participants' interest in the experience, and their motivation as a result of the experience; 2) the worth of the experience, as compared to alternative experiences, as perceived by the participants; 3) the connotative meaning of the experience, as compared with the connotative meaning of a concept which signifies other types of experiences by which the participants could achieve the same learning objectives; 4) the cognitive change that takes place in the individual as a result of participating in the experience; 5) the po-

tential for the further development of learning experiences utilizing the same instructional approach; and 6) the expenditure of time and money used in the development and production of the learning experience.

In the following sections an attempt has been made to present the data in a manner which moves from a direct reference to the two audio modular instructional units, to a broader perspective of the concept of the audio modular instructional approach. The following subsections present the data relating to the participants' interest and resultant motivation from having participated in the audio modular instructional units.

The Results Relating to the Participants' Interest in the Experience and Their Motivation as a Result of the Experience

The participants' interest toward their experience with the audio modular instructional units and their motivation as a result of experiencing the units were determined through the use of five "closed" questions on a written questionnaire. These questions were focused on the following concerns: 1) the degree to which the experience with the audio modular instructional units was interesting to the participant; 2) the degree to which the experience with the units was of

value to the participants' own learning; 3) the degree to which participating in the units was perceived as being worth the amount of time spent on completing them; 4) the degree to which the participant felt he would have subjected himself to the modular experience if he had had the choice; and 5) the degree to which the participant is excited about recommending to other persons that they should participate in the audio modular instructional units. In the following sections are presented the data relating to these five questions.

The Degree to Which the Experience with the Units was Interesting to the Participants

In Table 15 are presented the results of the responses to the statement, "I found participating in the audio instructional modules..." More than 95 percent of the participants (95.5 percent) found the experience to be interesting, while one participant (4.5 percent) found the experience to be somewhat boring. More than three-fourths of the participants (77.3 percent) gave the highest possible rating to this question. From these data, it appears that the audio modular instructional units provided an interesting experience for the participants.

The Degree to Which the Experience with the Units was of Value to the Participants' Own Learning

In Table 16 are presented the data obtained in response to the

TABLE 15

RESULTS OF THE RESPONSE TO THE STATEMENT, "I FOUND PARTICIPATING IN THE AUDIO INSTRUCTIONAL MODULES..."

Response Pattern	Responses Made (N=22) No.		%	
Very interesting	17	= 21	77.3	= 95.5%
Somewhat interesting	4		18.2	
Neither interesting nor boring	0		0.0	
Somewhat boring	1	= 1	4.5	= 4.5%
Very boring	0		0.0	

statement, "I found participating in the audio instructional modules..." From these data it appears that slightly less than two-thirds of the respondents (63.6 percent) felt that participating in the units was a "very valuable learning experience." Again, this represents a relatively high percentage of the participants providing the highest possible rating for the question. An additional 27.4 percent felt that it was "a learning experience of some value." These data indicate that 91.0 percent of the participants perceived the experience as having some degree of value. Two respondents, representing 9.0 percent of the population,

TABLE 16

RESULT OF THE RESPONSE TO THE STATEMENT, "I FOUND PARTICIPATING IN THE AUDIO INSTRUCTIONAL MODULES..."

Response Pattern	Responses Made (N=22) No.		%	
a very valuable learning experience	14	= 20	63.6	= 91.0%
a learning experience of some value	6		27.4	
an experience which is neither valuable nor worthless as far as my own learning	2		9.0	
an experience somewhat worthless as far as my own learning	0	= 0	0.0	= 0.0%
an experience which was completely worthless as far as my own learning	0		0.0	

provided a neutral response to this question, while none of the participants provided negative responses to the question. It appears to the investigator that these data reinforce the notion that the participants perceived the experience as having some degree of value.

The Degree to which the
Experience with the Units
was Perceived as being
Worth the Amount of
Time Spent on Them

The participants were asked to estimate the amount of time they had spent participating in the module, and then to respond to a question asking whether the experience was worth this amount of their time. According to the data gathered from the participants of the "Leader Behavior Module", they spent an average of 45 - 60 minutes completing the unit. An average of 90 - 120 minutes was spent completing the "Leader Style Adaptability" module.

The data presented in Table 17 are the results of the response to the statement, "I feel that the experience I gained from participating in this module..." More than 68 percent of the participants (68.1 percent) felt that the experience had "definitely been worth" the time spent on the audio modular instructional units. Twenty-one of the 22 participants (95.5 percent) felt that the experience was worth this amount of time to some degree. One participant provided a neutral response to this question. None of the participants gave a negative response to the question. These data appear to indicate that the two to three hours spent on participating in the two audio modular instructional units was a worthwhile investment of time.

TABLE 17

RESULT OF THE RESPONSE TO THE STATEMENT, "I FEEL THAT THE EXPERIENCE I GAINED FROM PARTICIPATING IN THIS MODULE..."

Response Pattern	Responses Made (N=22) No.		%	
was definitely worth this amount of time	15	= 21	68.1	= 95.5%
was probably worth this amount of time	6		27.4	
may or may not have been worth this amount of time	1		4.5	
was probably not worth this amount of time	0	= 0	0.0	= 0.0%
was definitely not worth this amount of time	0		0.0	

The Degree to which the Participants would have Subjected Themselves to the Experience if They had had the Choice

An attempt was made to determine whether the participant, after knowing what the experience was like, would have subjected himself

to the experience if he had had the choice. The data presented in Table 18 is the result of the response to the statement, "Now that I know what the modules are like, if I had had the choice I would..."

More than 95 percent of the participants (95.5 percent), after knowing what the experience entails, would have either "probably" or "definitely" completed this experience with the units if they had

TABLE 18

RESULT OF THE RESPONSE TO THE STATEMENT, "NOW THAT I KNOW WHAT THE MODULES ARE LIKE, IF I HAD HAD THE CHOICE I WOULD..."

Response Pattern	Responses Made (N=22) No.		%	
have definitely participated in the module	17	= 21	77.3	= 95.5%
have probably participated in the module	4		18.2	
not know whether I would have participated in the module	1		4.5	
have probably not participated in the module	0	= 0	0.0	= 0.0%
have definitely not participated in the module	0		0.0	

the choice. More than three-fourths of the participants (77.3 percent) gave the highest possible rating for this question. None of the participants provided a negative response for the question, while only one participant provided a neutral response. These data appear to indicate that the two audio modular instructional units provided an experience for the participants which was rewarding and desirable for them. It is an experience which they would have subjected themselves to if they had had the choice.

The Degree to which the Participant is Excited about Recommending the Experience to Another Person

It was felt that one measure of an individual's attitude toward an experience could be determined by discovering the participant's commitment toward recommending the same experience to another person. The data presented in Table 19 provide the results of the response to the question, "How excited would you be in recommending to a fellow student that he/she participate in this module?"

Slightly more than two-thirds (68.2 percent) of the respondents would be very excited about recommending the modular units to another student, while a total of 95.5 percent gave responses in the positive direction. Only one of the participants had no feelings either way about recommending the modules to fellow students. None of the

TABLE 19

RESULT OF THE RESPONSE TO THE QUESTION, "HOW EXCITED WOULD YOU BE IN RECOMMENDING TO A FELLOW STUDENT THAT HE/SHE PARTICIPATE IN THIS MODULE?"

Response Pattern	Responses Made (N=22) No.		%	
very excited	15	= 21	68.1	= 95.5%
somewhat excited	6		27.4	
no feeling either way	1		4.5	
would be reluctant to recommend it	0	= 0	0.0	= 0.0%
definitely would not recommend it	0		0.0	

participants provided a negative response for this question. These results indicate that the participants would be excited about recommending to another student that he should participate in the two audio modular instructional units.

Summary

In the previous sections, the data from five "closed" questions were presented and analyzed. These questions focused on concerns

relating to the criterion for suitability pertaining to the participants' interest in the experience with the audio modular instructional units, and their motivation as a result of this experience. These data indicate that 63 percent to 77 percent of the participants gave the highest possible positive ratings for each one of the five questions. More than 90 percent of the participants provided positive ratings on all five of these questions, while no more than one participant gave a negative response for any one of the five questions.

From these results, it is apparent to the investigator that the two audio modular instructional units have met the criterion established for determining the suitability of the units as one means of providing an alternative pre-service training technique for the training of school administrators. This conclusion is based on the fact that, according to the perceptions of the participants: 1) the units provided an experience which was interesting for the participants; 2) the units provided an experience which was valuable to the participants' own learning; 3) the units provided an experience which was worth the two hours to three hours spent on them; 4) the experience with the units was sufficiently rewarding so that the participants would have subjected themselves to this same experience if they had had the choice; and 5) the experience with the units is one in which the participants would be excited about recommending the same experience to other

students.

The Results of the Data Relating to the Perceived Worth of the Experience, as Compared to Alternative Experiences

In the previous section the results were presented relating to the participants' interest in their experience with the two audio modular instructional units, and their motivation as a result of this experience. In the present section the results are presented relating to the perceived worth of the experience with the audio modular instructional approach as compared to alternative pre-service instructional approaches for the training of school administrators.

This section includes three parts: 1) the participants' choice of alternative instructional approaches, as opposed to the two audio modular instructional units; 2) the participants' order of preference of alternative instructional approaches, as compared to the audio modular instructional approach; and 3) a summary statement. These three parts are presented in a manner so as to first, analyze the participants' attitude toward the two specific units as compared to alternative pre-service training techniques; and second, to move to the broader perspective of analyzing the participants' attitude toward the audio modular instructional approach as it compares with alternative pre-service instructional approaches for the training of school admin-

istrators.

The Participants' Choice of Alternative Instructional Approaches as Opposed to the Two Audio Modular Instructional Units

An attempt was made to test the participants' attitude toward the two audio modular instructional units against their attitude toward an alternative instructional approach through which they could learn the same knowledge or skills. The participants were first asked to state what they felt they had learned from their experience with the two units. Through using this perception as a personal reference point, they were then asked to state what other existing instructional method they would have preferred in order to learn this. The responses to the "open-ended" question were then categorized.

In Table 20 are presented the data resulting from the categorization of the participants' responses to the question on what the participants felt that they had learned from the audio modular instructional units. As is illustrated, 36 responses were given for this question. Of these 36 responses, 16 responses or 44.4 percent of the total number of responses made, related to the category of an understanding of their own leadership style. In other words, the greatest number of participants felt that through their experience with the units they gained a greater self-awareness of their own leadership style. It is

TABLE 20

THE RESULTS OF THE CATEGORIZATION OF THE RESPONSES MADE TO THE OPEN-ENDED QUESTION, "BRIEFLY STATE WHAT YOU FEEL YOU HAVE LEARNED FROM THESE MODULES."

Categories	Number and Percent of responses made in each category	
	No.	%
An understanding of my own style of leadership	16	44.4
A greater understanding of the "Life Cycle Theory"	6	16.7
The realization that an effective leader must have a flexible leadership style	4	11.1
An understanding of the process of making decisions based on knowledge of the existing situation	4	11.1
The realization that planned change is usually successful change	3	8.4
An understanding of the decision-making process	2	5.5
The realization of how important the perceptions of the followers are in the situation	1	2.8
Total	36	100.0

interesting to note that, for the unit developers, this self-analysis goal was an "enroute objective," but for most of the participants it appears to have been the major terminal objective; that is, as this objective relates to what the participants felt that they had learned from the units.

Six of the responses are focused on the category of a greater understanding of the "Life Cycle Theory." This indicates that 16.7 percent of the responses related to the terminal objective which was stated for the two units; that is, the application of the "Life Cycle Theory" to simulated situations.

The other responses related to an awareness of: 1) the need for a flexible leadership style; 2) the importance of planned change; 3) the operational aspects of situational leadership; 4) the general functioning of the decision-making process; and 5) the importance of the perceptions of the followers. These are the categories for the types of learning which the participants felt that they had gained from their experience with the two audio modular instructional units.

By relating these results to the data presented in Table 16, page 163, it appears that the knowledge and skills which the participants have stated here as being the ones which were learned from the two units, are valuable to the participants in their own learning. This is an important consideration in attempting to determine the individual's

attitude toward participating in the two audio modular instructional units, as opposed to other alternative instructional approaches for gaining these same learnings. This rationale will be explained in greater detail in a latter part of this section.

After the participant listed what he felt he had learned from the units, he was then asked to list any other existing instructional method he would have preferred to participate in, in order to learn this. The responses to this "open-ended" question were then categorized. In Table 21 are presented the data resulting from the categorization of the participants' responses to the question on alternative methods. As is illustrated in this table, 60.0 percent of the responses indicated that no other method or approach would be better than the audio modular instructional units for gaining the knowledge or skills which the individuals felt they had gained from the two units. Ten percent of the responses indicated that what the individuals had learned could be obtained better through the utilization of role playing situations. Two of the participants did not respond to this question. The other alternative methods which were mentioned were: 1) a combination of lecture and discussion; 2) personal interaction; 3) the assessment center approach; 4) on-the-job training; and 5) a film presentation, followed by an analysis.

These data indicate that 31.5 percent of the participants volun-

TABLE 21

THE RESULTS OF THE CATEGORIZATION OF THE RESPONSES MADE TO THE OPEN-ENDED QUESTION, "WHAT OTHER EXISTING INSTRUCTIONAL METHOD WOULD YOU HAVE PREFERRED TO PARTICIPATE IN IN ORDER TO LEARN THIS?"

Categories	Number and Percent of responses made in each category*	
	Number of responses made	Percent of responses made
No other approach would be better	13	60.0
Role playing	2	10.0
Lecture/discussion	1	5.0
Personal interaction	1	5.0
Assessment Center	1	5.0
On-the-job training	1	5.0
Film presentation, with analysis	1	5.0
Total	20	100.0

*Two participants did not respond to this question.

teered other specific alternative instructional approaches, while 60.0 percent of the participants felt that the audio modular instructional

unit approach was the best approach for gaining the specific knowledge or skills which each individual perceived he had gained from the two units. For any one of the alternative methods which were volunteered by the respondents, the highest percent of participants listing the method was 10.0 percent. These data strongly suggest that the two audio modular instructional units were perceived as being better than, or as good as any other single alternative method or approach for gaining the specific knowledge or skill which each individual perceived he had gained from the two units. In addition, due to the fact that the data from Table 16 indicate that these specific learnings were perceived as being valuable to the participant, these data strongly support the conclusion that the audio modular instructional approach is suitable as an alternative pre-service instructional approach for the training of school administrators.

The Participants' Order of Preference of Alternative Instructional Approaches, as Compared to the Audio Modular Instructional Unit Approach

A second attempt was made to determine the participants' attitude toward the audio modular instructional unit approach, as compared with other forms of pre-service training approaches. In this assessment, an effort was made to move beyond a specific reference to the two audio modular instructional units, and to move toward a broader

reference, that of the audio modular instructional approach as a general concept. To do this, the participants were asked to rank-order a list of six pre-service approaches according to their order of preference. The reference to the audio modular instructional approach was included in the list, and was stated as, "Participate in an audio modular instructional unit." Additional blank spaces were provided for the respondent to add any other preferences. The data presented in Table 22 provide the results of this rank-ordering process.

As is illustrated in the table, none of the participants listed any additional alternative instructional approaches. Of the six approaches which were on the original list, twelve of the participants (54.5 percent) ranked the audio modular instructional unit approach as being their highest preference. Seventeen of the participants (77.3 percent) ranked the audio modular instructional unit approach as either first or second choice of preference, while three participants (13.6 percent) ranked this approach as third, and two participants ranked it fourth in preference. The audio modular instructional unit approach was the only approach on the list which did not elicit a single response in either of the two lowest ratings—a rating of five or six.

The instructional approach which appears to be second in order of preference is the visiting of schools to observe leaders in action. Eight of the participants (36.4 percent) ranked this approach as either

TABLE 22

RESULTS OF THE RESPONSE TO THE RANKING OF PRE-SERVICE APPROACHES IN ORDER OF PREFERENCE

	Pattern of ranking and number of responses made (N=22)							
	Highest Preference					Lowest Preference		
	1	2	1 & 2 (comb)	3	4	5	6	5 & 6 (comb)
(a) Attend a seminar where the material is presented in lecture form	2	4	(6)	4	6	4	2	(6)
(b) Participate in a course where the material in question is presented sometime within the context of the course	4	2	(6)	5	2	3	6	(9)
(c) Purchase a professional book and read it	0	2	(2)	3	3	8	6	(14)
(d) Visit schools to observe leaders in action	3	5	(8)	3	5	3	3	(6)
(e) Participate in an audio modular instructional unit	12	5	(17)	3	2	0	0	(0)
(f) Discover the material through independent study	1	4	(5)	4	4	4	5	(9)

first or second choice, while six participants (27.4 percent) ranked it as either fifth or sixth choice. The least desirable approach appears to be that of purchasing a professional book and reading it. This approach drew two responses (9.0 percent of the respondents) for the first or second choices, and fourteen responses (63.6 percent of the respondents) for the fifth and sixth rankings on the scale.

In order to gain a clearer perspective of these rankings, the rank-order scores were weighted and the means of these weighted scores were determined for each approach. The graph presented in Figure 11 provides a visual comparison of the order of preference for the six pre-service approaches which were listed on the questionnaire.

As is illustrated on this graph, out of a possible mean score of 5.0, the mean weighted score for the audio modular instructional unit approach is 4.2. The approach of visiting schools to observe leaders in action was second highest with a mean score of 2.6. The regular course approach and the seminar approach were next with means of 2.3 and 2.2 respectively. The independent study approach and the approach of reading professional books were last with mean scores of 2.0 and 1.4 respectively.

It appears from these data that the audio modular instructional unit approach is as good as or better than the alternative instructional

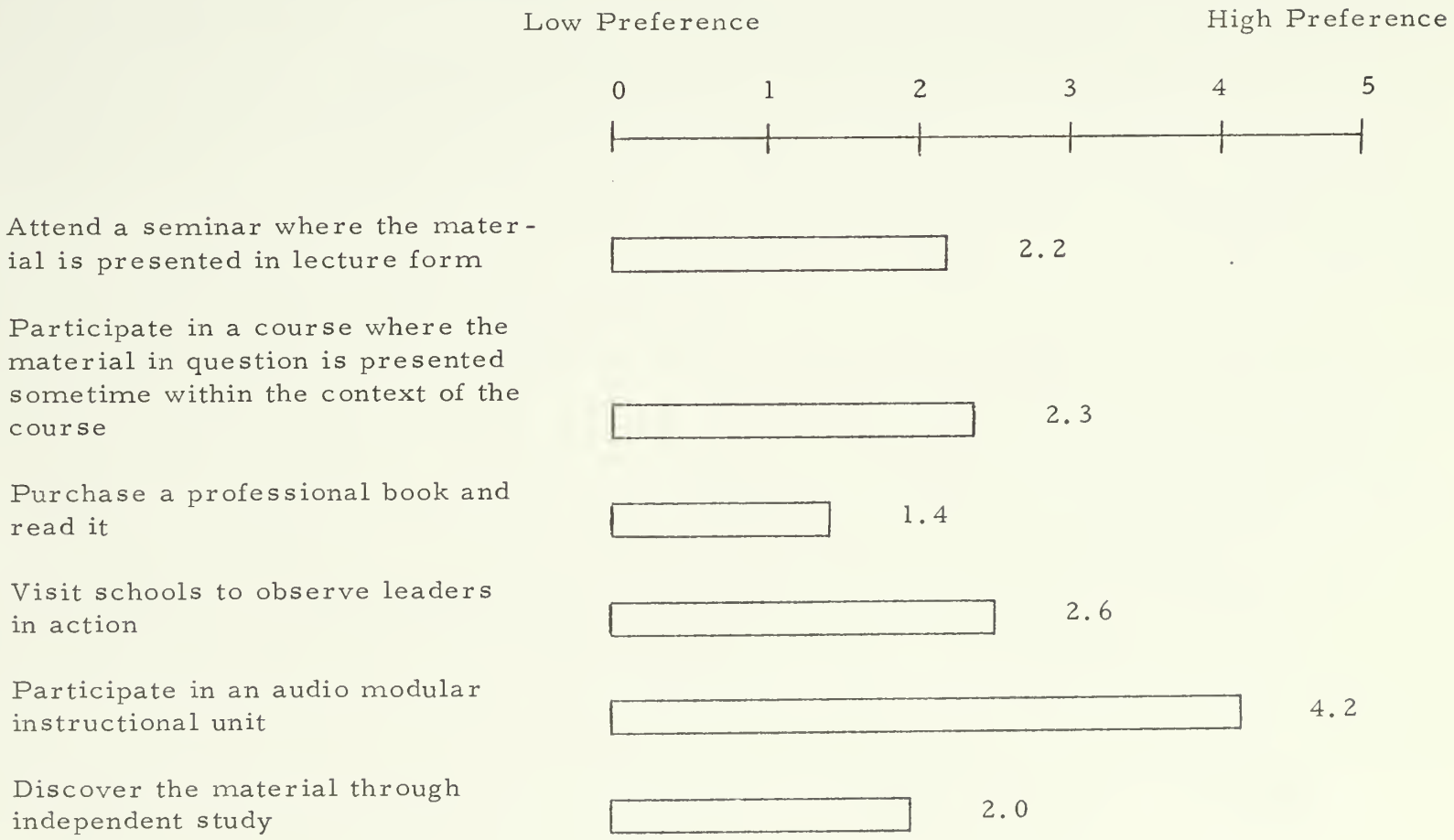

Figure 11—The preferences to various forms of pre-service training for school administrators as determined through calculating the means of weighted scores gained through a rank-ordering process.

approaches which have been used quite commonly in the past, for the training of school administrators. The investigator realizes, in retrospect, that the original list of six alternative instructional approaches may be somewhat limited; and due to this fact, these findings must be viewed with caution. Many of the more innovative instructional approaches, such as, role playing techniques, the assessment center approach, the creative use of films, and simulation techniques were not on the list. On the other hand, it could be reasoned that most of these latter approaches require the presence of a trained facilitator; and, most of these approaches could be integrated into the audio modular instructional approach, thereby eliminating the need and expense of a trained facilitator.

Nevertheless, the absence of a comprehensive list to which the participants could react, makes the investigator question whether any definitive conclusions could be made from these data as to how the participants would rank-order the audio modular instructional unit approach, as compared to a comprehensive list of approaches requiring the use of a trained facilitator.

Summary

In this section the results were presented relating to the experience with the perceived worth of the audio modular instructional ap-

proach as compared to alternative pre-service instructional approaches, for the training of school administrators. The data in this section indicated that the majority of participants (61.1 percent) felt that, as a result of their experience with the two units, they had gained knowledge which focused on two areas: 1) an understanding or awareness of their own leadership style; and 2) a greater understanding of the "Life Cycle Theory." By using this perception, each participant was asked to state any other existing instructional method he would have preferred in order to gain the knowledge contained in the two units. The data from their responses indicated that less than one-third of the participants (31.5 percent) volunteered other specific alternative instructional approaches, while slightly less than sixty percent of the respondents (59.5 percent) felt that the participation in the audio modular instructional units was the best approach for gaining the knowledge and skills which the participant perceived he had gained from the units.

An attempt was made to move beyond a specific reference to the two audio modular instructional units, and to move toward a broader reference, that of the audio modular instructional approach, as a more general concept. In order to do this, the participants were asked to rank-order a list of six pre-service instructional approaches, including the audio modular instructional approach. The data result-

ing from the rank-ordering process indicate that more than three-fourths of the participants (77.3 percent) ranked the audio modular instructional approach as either first or second choice, while none of the participants ranked it as fifth or sixth choice. For each approach, these rank-order scores were weighted and the means of these weighted scores were determined. The data resulting from this procedure indicated that, of a possible score of 5.0, the mean weighted score for the audio modular instructional approach was 4.2. The score for the second highest instructional approach was 2.6, while the score for the lowest ranked instructional approach was 1.4. In retrospect, the investigator felt that the original list of six instructional approaches was somewhat limited; nevertheless, these six approaches did represent some of the pre-service instructional approaches which have been used extensively in the past for the training of school administrators.

Collectively, the data presented in this section indicate that the audio modular instructional approach is perceived of as being equal to or of more worth than alternative pre-service instructional approaches for the training of school administrators. When related to the second criteria for determining the suitability of the audio modular instructional approach, these data support the conclusion that the audio modular instructional approach is suitable as one alternative

pre-service instructional approach for the training of school administrators.

The Results from the Determination of the Connotative Meaning of the Experience

In a further attempt to move toward a broader perspective on the audio modular instructional approach as a concept, the participants were asked to react to a semantic differential scale for determining the connotative meaning of the concept, "Audio Modular Instruction as One Alternative Approach for Pre-service Education for School Administrators." The response patterns on the semantic differential scale included: 1) polar traits relating to the factors of evaluation, potency, and activity; and 2) the polar traits signifying the degree to which the concept is thoughtful, open, promising, useful, meaningful, successful and interesting.

In order to compare the connotative meaning of the audio modular instructional approach, as a concept, with a concept signifying "other pre-service instructional approaches for school administrators," a second semantic differential scale was constructed. The concept stated on the second scale was, "Pre-service Educational Programs for Administrators in which You have Participated (Excluding the Audio Modular Instructional Approach, but Including Course Work and Other Learning Experiences)." (Further details of this procedure, as

used in the present study, are described in Chapter IV of this report.) In the following sections are presented the results from the administration of the two semantic differential scales.

The Results Relating to the Factors of Evaluation, Potency, and Activity

The data presented in Table 23 show the results of the participants' responses to the two semantic differential scales, as these responses relate to the factors of evaluation, potency, and activity. For the concept of audio modular instructional approach, the mean polarity score relating to the evaluative factor was 4.93 (S.D. = 0.70), as compared to 4.27 (S.D. = 0.89) for the concept signifying "other pre-service instructional programs." The difference in these scores of 0.66 is significant at the 0.0102 level.

The mean polarity scores related to the factor of potency for the audio modular instructional approach, as compared to "other forms of pre-service training," are 4.76 (S.D. = 0.93) and 3.78 (S.D. = 1.06) respectively. The difference between these scores is 0.98, which is significant at the 0.003 level. In relation to the activity factor, the difference between the score of 4.79 (S.D. = 0.83) for the audio modular instructional approach, and the score of 3.40 (S.D. = 1.06) for "other forms of pre-service training," is 1.39. This difference is significant at the 0.0001 level.

TABLE 23

THE RESULTS OF THE RESPONSES TOWARD THE AUDIO MODULAR APPROACH COMPARED WITH OTHER FORMS OF PRE-SERVICE TRAINING FOR ADMINISTRATORS, AS RELATED TO EVALUATIVE, POTENCY, AND ACTIVITY FACTORS DETERMINED THROUGH THE USE OF THE SEMANTIC DIFFERENTIAL

	Mean Polarity Scores (Sum of Weighted Responses) (N=22)					
	Audio Modular Instructional Approach		Other forms of Pre-Service Training			
Factor	Score	(S.D.)	Score	(S.D.)	Difference in Scores	F-Ratio
Evaluative	4.93	0.70	4.27	0.89	0.66	7.2190*
Potency	4.76	0.93	3.78	1.06	0.98	10.2355**
Activity	4.79	0.83	3.40	1.06	1.39	22.1900***

*Exact Probability of F = .0102 Analysis of Variance

**Exact Probability of F = .003 Analysis of Variance

***Exact Probability of F = .0001 Analysis of Variance

These data indicate that, for the factors of evaluation, potency and activity, the audio modular instructional approach (as a concept) elicits a greater positive reaction than does the concept signifying "other forms of pre-service training" in which the respondents have participated. The participants' experience with the audio modular instructional approach, as compared with their experience with other instructional approaches, appears to have been: 1) more greatly valued—related to such traits as more pleasant, more timely, more complete, etcetera; 2) more potent—related to such traits as more constrained, less permissive, less shallow, broader, etcetera; and 3) more active. The greatest difference between the audio modular instructional approach and other instructional approaches appears to relate to the factor of activity. The experience with the audio modular instructional approach elicits a connotative meaning of greater activity than do other forms of pre-service training.

The Results Relating to the Seven Specific Polar Traits

The mean polarity scores for seven of the specific polar traits were calculated separately. These polar traits are; 1) thoughtful-thoughtless, 2) open-closed, 3) promising-disappointing, 4) useful-useless, 5) meaningful-meaningless, 6) successful-unsuccessful, and 7) interesting-uninteresting. These scores, as they related to

each of the two concepts, are presented in Table 24. As is illustrated here, all of the scores relating to the audio modular instructional approach (as a concept) are greater for each of the polar traits than the scores for the same traits relating to the concept which signified "other forms of pre-service training." The only score relating to the audio modular instructional approach which fell below 5.00 was the score relating to the polar traits of "open-closed," these also being the polar traits which elicited the lowest score relating to the concept which signified "other forms of pre-service training." None of the scores relating to "other forms of pre-service training" reached the score of 5.00.

The polar traits eliciting the greatest difference in scores between the two concepts was that of "promising-disappointing." The difference in the scores between the two concepts relating to these polar traits is 1.43. This difference in scores is significant at the 0.0003 level. For these polar traits ("promising-disappointing") the score of 5.48 (S.D. = 0.87) is the second highest score for all of the polar traits relating to the audio modular instructional approach, while the score of 4.05 (S.D. = 1.28) is the second lowest score of all the polar traits relating to the concept which signifies "other forms of pre-service training." To the investigator, these data strongly support a conclusion that the audio modular instructional approach is suitable as

TABLE 24

RESULT OF THE RESPONSES TOWARD COMPARING THE AUDIO MODULAR APPROACH TO OTHER FORMS OF PRE-SERVICE FOR ADMINISTRATORS AS THESE RESPONSES RELATE TO VARIOUS ATTITUDINAL FACTORS, MEASURED THROUGH THE USE OF THE SEMANTIC DIFFERENTIAL

	Mean Polarity Scores (Sum of Weighted Responses) (N=22)						
	Audio Modular Instructional Approach		Other forms of Pre-Service				
Polar Traits	Score	(S.D.)	Score	(S.D.)	Difference in scores	F-Ratio	Exact Probability of F = ___*
Thoughtful-Thoughtless	5.10	0.83	4.14	2.86	0.96	7.2727	.01
Open-Closed	4.38	1.46	3.29	1.74	1.09	4.8801	.031
Promising-Disappointing	5.48	0.87	4.05	1.28	1.43	17.7866	.0003
Useful-Useless	5.52	0.60	4.52	1.12	1.00	12.9326	.0012
Meaningful-Meaningless	5.33	0.73	4.62	1.07	0.71	6.3739	.015
Successful-Unsuccessful	5.10	0.83	4.71	0.90	0.39	2.0253	.159**
Interesting-Uninteresting	5.57	0.60	4.38	1.43	1.19	12.3762	.0014

*Analysis of Variance

**Not significant

one promising alternative instructional approach to be used in pre-service training programs for school administrators.

The specific polar traits of "interesting-uninteresting" and "useful-useless" elicited the next most significant difference in scores for the two concepts. The difference in the scores for the polar traits "interesting-uninteresting" is 1.19, which reached a statistical level of significance of 0.0014. The difference in the scores for the polar traits "useful-useless" is 1.00, which reached a statistical level of significance of 0.0012.

These data indicate that for the traits related to interest and usefulness, the audio modular instructional approach (as a concept) elicits a greater positive reaction than does the concept which signifies "other forms of pre-service training" in which the respondents have participated. The participants' experience with the audio modular instructional approach, as compared to their experience with other instructional approaches, appears to have been more interesting and more useful. These conclusions are further supported by the data presented in Table 15, page 162, and Table 16, page 163, of this report. The data from these tables indicate that the participants' experience with the two audio modular instructional units was interesting and valuable to their own learning.

As the data presented in Table 24 illustrate, the only polar traits

for which the difference in scores between the two concepts did not reach the level of statistical significance were the polar traits of "successful-unsuccessful." The difference in scores between the two concepts for these polar traits was 0.39. One of the causes for this lack of statistical significance may be due to the fact that in the final game simulation exercise in the two audio modular instructional units used in the study, many of the participants had a difficult time in succeeding in the game. For the respondents, the polar traits "successful-unsuccessful," as they related to the concept "audio modular instructional approach," may have been interpreted as a reference to how successful they had been in carrying out the activities within this approach. In turn, many of the participants have probably been very successful in their other courses relating to the area of educational administration. These polar traits ("successful-unsuccessful") elicited the highest score of any of the seven polar traits relating to the concept which signifies "other forms of pre-service training" in which the respondents have participated. Nevertheless, this lack of statistical significance may also indicate that, at the present level of developmental sophistication, the audio modular instructional approach (as a concept) is no more successful than the other instructional approaches in which the respondents have participated. It appears to the investigator that these data do indicate that the audio modular instructional approach is

perceived of as being as successful as other pre-service instructional approaches for the training of school administrators.

Summary

In this section the results were presented relating to the connotative meaning, for the participant, of the audio modular instructional approach (as a concept), as compared with the connotative meaning of a concept which signified other types of experiences by which the participants could achieve the same learning objectives. In order to determine this, the participants were asked to react to two semantic differential scales. The concept which was stated on one of the scales was "Audio Modular Instruction as One Alternative Approach for Pre-service Education for School Administrators." The concept which was stated on the other scale was "Pre-service Education Programs for Administrators in which You have Participated (Excluding the Audio Modular Instructional Approach, but Including Course Work and Other Learning Experiences)." The same list of polar traits utilized by the semantic differentials was used for both scales.

The data from this procedure indicated that the audio modular instructional approach (as a concept), elicited a greater positive reaction which was statistically significant, than did the concept which signified "other forms of pre-service training," for the factors of evaluation, potency, and activity. The greatest and most significant dif-

ference in mean polarity scores between the two concepts related to the factor of activity. The data indicate that the participants' experience with the audio modular instructional approach, as compared with their experience with other instructional approaches, is perceived to be; 1) more greatly valued, 2) more potent, and 3) more active.

The results from the administration of the two semantic differential scales also indicate a statistically significant difference (between the two concepts) for the specific polar traits of; 1) thoughtful-thoughtless, 2) open-closed, 3) promising-disappointing, 4) useful-useless, 5) meaningful-meaningless, and 6) interesting-uninteresting. All of the mean polarity scores relating to the audio modular instructional approach (as a concept) are greater for each of these polar traits than the score for the same traits relating to the concept which signified "other forms of pre-service training." The difference in the scores between the two concepts reached the level of statistical significance for each of the six polar traits. The polar traits eliciting the greatest and most significant difference in the scores between the two concepts was that of "promising-disappointing." The difference in the scores between the two concepts, as these scores relate to the polar traits of "promising-disappointing," was 1.42. This difference in scores was significant at the 0.0003 level.

Taken together, these data indicate that there is a difference between the two concepts in their connotative meaning to the participants. The audio modular instructional approach, as compared to other forms of pre-service training for school administrators, elicited greater positive reactions on all the factors and polar traits which were measured. The greatest and most significant difference in the mean polarity scores were for the factor of activity, and the polar traits of "promising-disappointing." When related to the third criterion for determining the suitability of the audio modular instructional approach, these data strongly support the conclusion that the audio modular instructional approach is suitable as one alternative pre-service instructional approach for the training of school administrators.

A Presentation of the Data Used to Determine the Cognitive Change that Takes Place in the Individual as a Result of Participating in the Experience

The posttest-only nonequivalent control group quasi-experimental design was used in an attempt to determine the cognitive changes which may have occurred as a result of participating in the audio modular instructional units.

A concept clarification test was adopted for each of the two modules tested. These tests were designed to measure the participants'

achievement on the material presented. The tests were administered to each of the experimental groups following their respective experience, as well as to the members of the control group. As outlined in Chapter I, experimental "Group A" consisted of twenty-two persons, who individually or in small groups of two or four, participated in both of the audio modular instructional units. The second group, experimental "Group B", consisted of twenty-two persons. This group received the same information that was given to "Group A", but "Group B" was presented the information in lecture-form, through the use of a "live" presentation. Consequently "Group B" had the opportunity to ask questions, and to interact on the information being presented. The third group, "Group C", which consisted of twenty-two persons, did not participate in either the audio modular instructional units, or the "live" presentations of the material. The members of this group had never encountered the information which was presented in the audio modular instructional units.

In all, there were 28 questions involved in the two tests. All tests were multiple-choice and pertained directly to the material presented. (Copies of the tests are found in Appendix A of this report.)

Table 25 illustrates the comparison of the three groups as they relate to mean scores, standard deviation, mean standard deviation, and the analysis of variance. As illustrated in Table 25, "Group A"

TABLE 25

THE RESULTS OF THE RESPONSES TOWARD THE ACHIEVEMENT TESTS BY THE THREE GROUPS PARTICIPATING. (EXPERIMENTAL GROUP "A"—MODULAR EXPERIENCE), (EXPERIMENTAL GROUP "B"—CLASSROOM EXPERIENCE), (EXPERIMENTAL GROUP "C" —CONTROL GROUP).

	Mean Polarity Scores (based on correct responses)				
	Sample Size	Mean	Standard Deviation	Mean Standard Deviation	Percent of Accuracy
Group "A"	22	20.2273	3.6375	5.5608	72.2
Group "B"	22	17.8182	3.0494	5.8434	63.6
Group "C"	22	6.9545	2.6811	2.5939	24.8

F-Ratio 111.0369

P = .01

had the highest mean score (20.2273) which represents a 72.2 percent accuracy. "Group B" had a mean score of 17.8182 representing a 63.6 percent accuracy. As expected, "Group C", having no previous knowledge of the information, registered a mean score of 6.9545 or a 24.8 percent of accuracy. The analysis of variance of the three groups showed an F-ratio of 111.0369 (significant at 0.01).

As determined in Table 25, anyone can take the competency examination and expect to achieve a 24.8 percent of accuracy. The degree of exposure to the material presented in the module from that point on should influence the data and produce a higher score of proficiency. In a pre-study briefing, it was assumed that the highest score would go to the group that had the opportunity to interact with the instructor, getting their information in a live classroom setting and having the opportunity to interact while the presentation was taking place. Upon analyzing the data following the exposure to the material by both experimental groups, it was discovered that the audio modular presentation had a higher degree of accuracy than did the group that was presented the material in the classroom setting. The percentage difference was 8.6, while the mean score difference was 2.4091. Although this finding was encouraging to the investigator who had supported the concept of audio modular instruction, the findings must be viewed with care.

It is important to note once again that, despite the great care taken in an attempt to match all three groups, this was essentially a nonequivalent group. The three groups were not perfectly matched, and this must be taken into consideration when viewing the data.

Group size is a second factor that must be considered when viewing the data. Although it appears as though this study was conducted with an audience of 66 participants, there were many more. The study population for "Group A" did consist of 22 persons. "Group B" consisted of 22 persons who were carefully selected from a group of more than 50. The selection criterion was compatability with "Group A". "Group C", consisting originally of more than 60 persons, was similarly selected for compatability with "Group A". In all, more than 150 students participated in some degree in the study. This group size still is not large enough to give a random sampling accuracy that was addressed by Belasco and Trice, and explained in Chapter II of this study.

Summary

An attempt was made to measure the degree of cognitive change that takes place in the individual as a result of participating in the experience. To do this measurement, the posttest-only nonequivalent control group quasi-experimental design was used. A not fully vali-

dated twenty-eight question multiple choice test was adopted to measure the degree of competency attained by the participating students. As was pointed out, the student knowing absolutely nothing about "Life Cycle Theory" as it pertains to leadership, could expect to attain slightly more than 24 percent accuracy on the competency examination.

The most rewarding data obtained from the competency testing came from the audio modular instruction group. This group produced an average of 8.6 percent higher test score than those that were subjected to the identical material in a "live" classroom setting. However, as pointed out previously, these data must be viewed with some degree of caution because of the failure to accurately match the three groups. However, a conclusion made by this investigator tends to support the contention that the audio modular instruction group did as well as, if not better than, the experimental group that had the obvious advantage of the live presentor when introduced to the material. It is with this conclusion that the investigator is able to support the cognitive changes that take place in the participant when presented specific skills and concepts through the use of the audio modular instructional approach.

The Results from the Determination of the Potential for Further Development of Learning Experiences Utilizing the Same Instructional Approach

In an attempt to measure the attitude of the 22 participants that had been through a modular experience, seven open-ended questions or statements were included in the evaluation questionnaire given to the students upon completion of their modular experience. These seven questions were included in the questionnaire as a means of measuring the potential for further development of learning experiences utilizing the same instructional approach.

The data obtained from these seven items have been tabulated and the results placed on separate tables. A brief analysis of each table is presented, followed by a conclusion statement. After each of the seven items has been analyzed, a summary is presented which will attempt to tie the seven factors to the suitability factor they were incorporated to measure.

In the following subsections the results are presented relating to the potentiality for further development of learning experiences utilizing the same instructional approach. This section includes four parts focused on: 1) the results of the two open-ended statements soliciting the major strengths and weaknesses of the audio modular approach; 2) the results of the two open-ended statements soliciting

the conditions under which the participant would participate in further modules; 3) the results of the two open-ended statements asking the participants for skills and topics that could be incorporated in further modular unit development; and 4) the results of a single open-ended statement requesting the conditions that must be considered before additional modules can be developed.

The Participants' Response to an Open-Ended Statement Soliciting Strengths of the Audio Modular Instructional Approach

The 22 participants that experienced the audio modular instructional units were asked to respond to the open-ended statement, "The major strengths of the audio modular instructional approach as a preservice technique are....." The results from the categorization of these responses are presented in Table 26.

All participants responded to the question, giving an average of 2.3 responses per participant. There were a total of fifty responses. Sixty percent of the responses fell into four categories. Nine participants (18.0 percent) identified the direct contact of the modular program as a strength. An additional twelve participants (24.0 percent) were impressed with the "ease of use" associated with the modular approach. Seven participants (14.0 percent) felt that the major strength of the program was its directness. They enjoyed the con-

TABLE 26

RESULTS OF THE CATEGORIZATION OF THE RESPONSES RELATED TO THE OPEN-ENDED STATEMENT, "THE MAJOR STRENGTHS OF THE AUDIO MODULAR INSTRUCTIONAL APPROACH AS A PRE-SERVICE TECHNIQUE ARE...."

	Number and Percent of responses made in each category	
Categories	Number of responses made	Percent of responses made
Easy to use—also, when time permits	12	24.0
Involves Participants Directly —individualized program	9	18.0
Concise, Informative, to the point	7	14.0
Time commitment—work at own pace	6	12.0
Represents a topic you are interested in	3	6.0
It represents an alternative to learning	3	6.0
Instant feedback	3	6.0
Non-threatening	3	6.0
Presents a large amount of material effectively	2	4.0
Ability to replay and review constantly	2	4.0
	50	100.0

cise, informative, to-the-point atmosphere associated with the modular unit approach. An additional six respondents (12.0 percent) felt a definite strength of the audio modular approach was in the time commitment factor; they were able to work at their own pace. The remaining 32 percent of the responses were related to the instant feedback factor, the non-threatening atmosphere, and two more general categories.

From these data it is difficult to draw a conclusive statement regarding the major strengths of the audio modular approach due to the absence of a single, dominating strength identified by the participants. The data obtained do suggest that the portability factor, the individualization, and the directness of the approach represents better than 50 percent of the strengths identified by the participants.

The Participants' Response to the Open-Ended Statement Related to the Weaknesses of the Audio Modular Instructional Approach

A second open-ended statement asked the participants to react to their perception of, "The major weaknesses of the audio modular instructional approach as a pre-service technique are...." The results from the categorization of these responses are presented in Table 27.

Of the 18 participants responding to the statement, 12 (66.6 percent) felt as though they could not identify a single weakness. Three

TABLE 27

RESULTS OF THE CATEGORIZATION OF THE RESPONSES RELATED TO THE OPEN-ENDED STATEMENT, "THE MAJOR WEAKNESSES OF THE AUDIO MODULAR INSTRUCTIONAL APPROACH AS A PRE-SERVICE TECHNIQUE ARE...."

	Number and Percent of responses made in each category*	
Categories	Number of responses made	Percent of responses made
None could be identified at this time—seemed like a good learning alternative	12	66.6
Lack of teacher-student identity	3	16.6
No formal structure	1	5.6
No continuity of programs	1	5.6
Cannot ask questions as in a "live" classroom setting	1	5.6
	18	100.0

*Four participants did not respond to this question

(16.6 percent) participants had reservations with regard to learning without a teacher. Somewhat related to this, one person (5.6 percent) felt somewhat uneasy about a learning situation that did not provide

the student an opportunity to ask questions. One participant missed the formal structure of the "old" traditional classroom setting. The final response was related to the continuity of programs. The participant wanted some means of pulling the modular units together to create a formal, somewhat traditional, three-hour course. This point was discussed further in a post-participation interview session which is presented in more detail later on in this chapter.

To the investigator, Table 27 was extremely valuable. Here, two-thirds of the respondents supported the alternative approach as a pre-service technique by such statements as: 1) "I was unable to identify any apparent weaknesses within this approach", or 2) "what a great way to learn leadership theory", and 3) "I thoroughly enjoyed the alternative approach and definitely feel as though we should continue the practice to add alternatives to our present program."

In Table 27 where three participants felt as though the student-teacher identity was valuable, and therefore an apparent weakness in the modular units, the investigator feels as though this situation can be corrected by soliciting more participation from the students utilizing the audio modular units. This correction should also eliminate the apparent weakness which was pointed to when a participant felt a need for more interaction. As for the two comments related to 1) no formal structure, and 2) no continuity of programs, this investigator

viewed these as positive reinforcement since the modular approach was designed to break away from the formal structure and the old "three-credits for three hours" educational philosophy.

The Participants' Response to the Open-Ended Statement, "I Would Spend Time Participating in an Audio Modular Instructional Unit Only if..."

A third open-ended statement used to solicit the participants' attitude toward further participation in the modular approach was, "I would spend time participating in an audio modular instructional unit only if...." The results from the categorization of these responses are presented in Table 28.

All 22 participants responded to the question. Fourteen (63.5 percent) commented that they would only participate in the unit if it met their needs. An additional three participants (13.5 percent) had a similar reaction in that they were looking for direct relevance to their work. The two similar statements represented 77 percent of the responses. Five other responses were given, each by a single respondent. Two of these statements were related to the time factor: "If I had the time," and "If the modular unit was not too long and boring."

From Tables 26 and 27, the investigator is led to believe that the

TABLE 28

RESULTS OF THE CATEGORIZATION OF THE RESPONSES RELATED TO THE OPEN-ENDED STATEMENT, "I WOULD SPEND TIME PARTICIPATING IN AN AUDIO MODULAR INSTRUCTIONAL UNIT ONLY IF....."

	Number and Percent of responses made in each category	
Categories	Number of responses made	Percent of responses made
it met my needs	14	63.5
I saw direct relevance to my work	3	13.5
there were more good ones available to me	1	4.6
I had the time	1	4.6
specific objectives were met	1	4.6
not too long and boring	1	4.6
the title attracted me	1	4.6
	22	100.0

participants are overwhelmingly in favor of the audio modular instructional approach and strongly support its further development. In

Table 28 over three-fourths of the participants want to be sure that their needs are being met. This seems to be priority number one. If those needs could be met through partial or total use of the audio modular approach, then there was favorable response to the approach.

Responses Related to the Participants' Rejection of the Audio Modular Approach

To further clarify the respondents' position toward the audio modular approach, the participants were asked to respond to the open-ended statement, "I would definitely not spend the time participating in an audio modular instructional unit if...." The results from the categorization of these responses are presented in Table 29.

Once again all participants responded to the statement. Nine participants (40.7 percent) said they would not participate if there was no apparent need. An additional four (18.2 percent) answered in much the same way saying they would not participate unless the modular units were related to their field of study. Others said they would not participate if the modules were too long, or of poor quality. Still others were hesitant about participating if there was no feedback built into the module, or the units provided no challenge.

It is important to note that the responses received from Table 29

TABLE 29

RESULTS OF THE CATEGORIZATION OF THE RESPONSES RELATED TO THE OPEN-ENDED STATEMENT, "I WOULD DEFINITELY NOT SPEND THE TIME PARTICIPATING IN AN AUDIO MODULAR INSTRUCTIONAL UNIT IF....."

	Number and Percent of responses made in each category	
Categories	Number of responses made	Percent of responses made
there was no need	9	40.7
it was not related to my field of study	4	18.2
it was too time consuming	2	9.1
if they were not challenging	2	9.1
if I could participate in a discussion	2	9.1
too much repetition	1	4.6
if I did not get direct feedback	1	4.6
if the quality was poor	1	4.6
	22	100.0

strongly coincide with the responses received from Table 28. Again, it appears as though the participant is still favoring the audio modular

approach, if it is designed to meet his needs. This was emphasized by slightly less than 60 percent of the responses from Table 29 and more than 77 percent from Table 28.

Responses Related to the Open-Ended Question Asking Participants to Recommend Skills for Modular Offerings

Table 30 presents the data obtained from the open-ended question, "What kind of skills do you think could be learned through the use of audio modular instruction?"

Sixteen participants responded to the question, generating 72 answers. These 72 answers covered fourteen topics. Two-thirds of the responses fell into the categories of: communications (16.7 percent), self-analysis (13.9 percent), diagnostic skills (12.6 percent), decision making (12.6 percent), and evaluation techniques (11.1 percent).

This question was basically soliciting skills that could be covered through the use of the audio modular instructional approach. It was interesting to note that four participants felt there was no limit to the skills that could be learned using the audio modular instructional approach.

From the answers generated by this question the investigator sensed a great need for more educational topics within the School of

TABLE 30

THE RESULTS OF THE CATEGORIZATION OF THE RESPONSES RELATED TO THE OPEN-ENDED QUESTION, "WHAT KINDS OF SKILLS DO YOU THINK COULD BE LEARNED THROUGH THE USE OF AUDIO MODULAR INSTRUCTION?"

	Number and Percent of responses made in each category*	
Categories	No.	%
Communications	12	16.7
Self-analysis	10	13.9
Awareness of skills—diagnostic skills	9	12.6
Decision making	9	12.6
Evaluation techniques	8	11.1
Needs assessment	7	9.7
Human Relations	5	6.9
Almost anything	4	5.6
Goal setting	2	2.7
Guidance	2	2.7
Budgetary skills	1	1.4
Discipline techniques	1	1.4
Public speaking techniques	1	1.4
In-service	1	1.4
	72	100.0

*Six participants did not respond to the question

Education, University of Massachusetts, related to the general area of human relations. This would, in part, include: communications, self-analysis, awareness skills, decision making, needs assessment, and guidance. In essence this would cover 68.2 percent of those conserns in Table 30.

The Results of the Participants' Responses Related to the Open-Ended Question Soliciting Additional Topics for Adaptation by the Audio Modular Instructional Approach

Fourteen participants responded to the open-ended question, "What additional topics might be adapted to audio modular instruction?" The results from the categorization of these responses are presented in Table 31.

It was interesting to note that one-fourth of the responses felt that most any topic could be adapted, and presented, by the use of the audio modular approach. An additional eight responses (18.6 percent) were in favor of additional leadership techniques. Five responses (11.6 percent) were supportive of communication skills. In all, fourteen participants generated 43 responses identifying eleven different categories.

Throughout the series of open-ended questions and statements, the audio modular instructional approach has been given overwhelming support for continued development. You will recall from Table 26,

TABLE 31

RESULTS OF THE CATEGORIZATION OF THE RESPONSES TO THE OPEN-ENDED QUESTION, "WHAT ADDITIONAL TOPICS MIGHT BE ADAPTED TO AUDIO MODULAR INSTRUCTION?"

Categories	Number and Percent of responses made in each category*	
	No.	%
Most any kind—wide open field	11	25.7
Most leadership techniques	8	18.6
Communication skills	5	11.6
Student teaching problems	3	7.0
School law	3	7.0
Teaching situations	3	7.0
Related to a school setting	3	7.0
Behavioral patterns and awareness	2	4.6
In-basket simulations	2	4.6
Public relations	2	4.6
Human relations	1	2.3
	43	100.0

*Eight participants did not respond to this question

page 202, that the major strengths of the audio modular instructional approach as a pre-service technique were identified. Table 27, page 204, was looking for the apparent weaknesses of the approach and more important, whether these identified weaknesses could be corrected in order to improve the program. Tables 28-31 attempted to identify any irritating factors that might jeopardize any further development of the units, as well as to solicit suggested skills and topics that should be considered when developing further modules.

Participants' Reaction to the Open-Ended Statement Soliciting Opinions Toward Further Development of Audio Modular Instructional Units

Table 32 presents the results of the categorization of the responses related to the open-ended statement, "For one to develop any more audio modular instructional units would...."

All participants responded to the statement. Eight respondents (36.2 percent) were impressed by the modules they participated in and felt it would be a good idea to continue the development of the program. Four participants (18.2 percent) felt as though continued development of the units would be a tremendous service to the Center for Leadership and Administration. Four participants (18.2 percent) felt compelled to express the personal growth that would be enhanced by further development of the modules. These three groups alone represent

TABLE 32

RESULTS OF THE CATEGORIZATION OF THE RESPONSES RELATED TO THE OPEN-ENDED STATEMENT, "FOR ONE TO DEVELOP ANY MORE AUDIO MODULAR INSTRUCTIONAL UNITS WOULD....."

	Number and Percent of responses made in each category	
Categories	Number of responses made	Percent of responses made
be a good idea	8	36.2
be a tremendous service to the Center for Leadership and Administration	4	18.2
be a great help to me	4	18.2
be an area worth exploring	2	9.0
make it less expensive	1	4.6
must be worth the effort	1	4.6
have to be made interesting	1	4.6
have to coordinate material to situation	1	4.6
	22	100.0

72.6 percent of the responses from Table 32. Two other respondents felt it would be an area worth continued exploration. The remaining

four responses were concerned with cost, the interest level, the effort exerted in the developmental stages and the material itself.

From these data it appears as though approximately three-fourths of the participants are strongly supportive of the continued development of the audio modular instructional units. They expressed their feelings by such statements as: a good idea, would be a tremendous service to the Center for Leadership and Administration, and, it would be a great help to me.

Summary

In this section, seven open-ended statements or questions were used in an attempt to obtain the students' attitude toward further development of audio modular instructional units as a pre-service technique for presenting selected skills and concepts to students of school administration. Table 26, page 202, was used to obtain the strengths of the technique. The strengths that were identified by the 22 participants were related to such responses as: individualization, ease of use, concise and informative, work at own pace, and others which led this investigator to assume the material and method was well received by the participants.

Table 27 solicited the obvious weaknesses from the participants as they conceived the audio modular approach being used to present

selected skills and concepts. Of the 18 participants responding to the statement, 12 (66.6 percent) felt as though they could not identify a single weakness in the use of the audio modular instructional approach. This response was extremely rewarding to the investigator. In essence, it meant that the initial audio modular units were well received and had much to offer the student of educational administration. Twenty-two of the remaining 33 percent were concerns regarding learning without the aid of an instructor. The four persons reacting to this weakness segment almost appeared apologetic for having learned a new concept without the aid of an "on-sight" professor.

To solicit further participant reaction toward the audio modular approach, an open-ended statement was used whereby the participant completed the partial statement which referred to the conditions that must be met if he is to participate in additional modules. As is shown in Table 28, page 207, 77 percent of the participants were interested in additional topics if their needs were met. Table 29 took the same question and presented it in a negative connotation and, as shown in the table on page 209, still more than sixty percent of the respondents supported the development of the audio modular units if they met the needs of the students.

Tables 30 and 31 indicate the results of soliciting skills that the participants felt could be learned through the modular approach and

also what topics were recommended for adaptation. As indicated in Table 30, page 211, sixteen respondents generated 72 suggestions covering fourteen topics. That represents 4.5 responses per participant. As was noted from Table 30, two-thirds of the responses fell into the categories of communications, self-analysis, diagnostic skills, decision making, and evaluation techniques.

Table 31, page 213, presents the data generated from the open-ended question soliciting additional topics that might be converted to modular units. Here, 14 participants responded to the question generating 43 topics in eleven different categories. As noted from the table, one-fourth of the participants felt there was no limit to the topics that could be presented using this approach. There were several requests for additional leadership materials and considerable support for greater communication skills.

The final open-ended statement illustrated on page 215 was looking for deep concerns for the audio modular approach. Each participant responded to an open-ended statement, "For one to develop any more audio modular instructional units would...." Seventy-three percent of the responses fell into one of three categories: 1) be a good idea, 2) be a tremendous service to the Center for Leadership and Administration, and 3) be a great service to me.

This last table seems to sum up the thoughts related to further

development of the audio modular instructional approach. From analyzing the seven tables, it appears there is strong support for the continuation of this program as long as the developer identifies the objectives early in the unit so the prospective participant can identify with the unit to determine if his needs will at least be partially met by his participation in the module.

Using the suitability factor: The potential for further development of learning experiences utilizing the same instructional approach, and identifying seven open-ended questions or statements which were used to measure the factor, the investigator concluded that the audio modular instructional approach has been strongly supported.

The Time and Money Factors Involved in the Development of the Audio Modular Units

An attempt was made to keep accurate records with reference to time and money expenditures for the development of the audio modular instructional units. Although fairly accurate figures are available for the cost factor, there are still several variables that must be identified.

There were ten copies of each modular unit produced. This is a figure that is too small for mass-production purchasing, yet too large

not to consider it. If these units could have been mass-produced, the figures could have been cut considerably for the cost of each unit. As it was, the "Leader Behavior" modular unit cost $15.40 to reproduce on a ten-unit basis. The "Leader Style Adaptability" modular unit cost $18.00 per unit, based on a ten-unit cost factor.

The time element is extremely difficult to compute since many over-lapping activities often distracted from the actual attempt to monitor the time. If consideration is given to the time factor from the very first brain-storming sessions down to the finished product, the time involved would be near 100 hours per unit. That figure represents 200 hours to develop one of each of the packets from idea to finished product.

The idea behind the development of the audio modular instructional packets is two-fold. First, it becomes a tool whereby alternatives to learning can be presented. This tool is therefore used to present selected skills and concepts to the student of school administration. Second, the tool can be used to enable a professor to turn planning hours now devoted to classroom preparation into hours of planning for modular presentations. These modular instructional packets can then be used as a means of introducing class work. The modular instructional packets can be used over and over again, requiring only routine updating.

A professor can turn these training modules into valuable learning experiences for the school district interested in the in-service training of its staff. If the professor is hired by the school district as a consultant, and he has modular packets developed around the theme of the presentation, these modular instructional packets can precede the professor into the district, thereby making the consultant's visit more meaningful to the participants.

These concepts are only mentioned because the development of an audio modular instructional packet is not a one-man task. As mentioned above, approximately 200 hours were needed for the investigator to develop the two audio modular instructional packets used in this study. For these two modules, the investigator worked as the mediator between the experts and the technicians. To explain the point further, Dr. Ken Blanchard supplied the knowledge that went into the modular packets. After the initial planning phases of the modular units, Dr. Blanchard was contacted for an input session. At that time, Dr. Blanchard and this investigator sat down in front of a tape recorder and "brain stormed" the material that was to be presented in the modular packets. After three or four hours of recording, this investigator transcribed the narration from the tapes into a written text. The next step was to get a copy of this text to Dr. Blanchard for his reaction. After several hours of editing the written

document, it was returned to this investigator for further refinement. Once again the document was returned to Dr. Blanchard. Upon its return, the document was circulated to several individuals who were familiar with the material being presented. These individuals were asked to read the text and supply comments when needed. Once again the document was placed back in the hands of Dr. Blanchard for final revision. At this point, the narration was completed for the cassette tape that was to accompany the written material in the audio modular instructional packet. The next step was to develop the guidebook that would be used in the packet. This guidebook contained the details of the modular program as well as the instructions on how to utilize the modular packet effectively. Again, Dr. Blanchard supplied valuable information pertaining to the material that should be included in the guidebook. Following the completion of the rough draft, he was again called upon for a final editing of the material being presented. A close estimate of the time spent by Dr. Blanchard would be 30 hours. This was for one packet, and the entire procedure was done a second time several weeks later when the second packet was being developed.

Phase two of the developmental stages of the audio modular instructional packets consisted of the investigator planning the packaging materials to be used for the modules, typing the final copies of the guidebook, duplicating the materials, and working with the local radio

station to have the narration done in a professional studio by a professional narrator. The original tape was taken to the University Instructional Materials Center for duplication on cassette cartridges.

The third and final phase was to place the materials that had been produced into ten packets. The time estimates show: Blanchard, 30 hours; the investigator, 60 hours; others, 10 hours. Total time on packet one—100 hours.

The investigator views the time and expense that went into the development of the instructional modules as not an added burden to the professor, rather a salvation. Having contributed 30 hours to the development of a specific concept, Dr. Blanchard now has an instructional module that is capable of becoming a pre-course entry requirement. The student having spent one to one and one-half hours completing the instructional module is now better able to determine whether he is willing to spend an entire semester working with Dr. Blanchard in a formal classroom session investigating in greater detail the very concept that was presented in the module. This approach to learning offers the professor an added advantage in that he knows the exact level of knowledge of those students entering his class.

Summary

An attempt has been made to justify the amount of time and ex-

pense that is involved in the development of audio modular instructional packets. It was pointed out that the key factor in the development of these packets must lie in the program specialist who has the job of coordinating the activities of the various experts needed throughout the development stages of the program. An important factor to consider in the development of the packets is the selection of the topic to be considered for modular presentation. If the topic is properly chosen, the alternatives that become available from that material seem only limited by the imagination of the developer. The topic may be used in the classroom setting, or in the field as an in-service training instrument. As noted by the figures quoted for the cost factor in the development of the modules, the cost is very minimal compared to the amount of time expended on the project. It is important to note that the cost can vary as much as the time element. If the audio modular units are to be of top quality and attractive to the user, additional time and expense must be considered.

CHAPTER VI

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of this study was to determine the suitability of utilizing the audio modular instructional approach as one alternative pre-service training technique for presenting selected concepts and skills to students of school administration who are enrolled in the graduate program in the School of Education at the University of Massachusetts. In the previous chapter the findings were presented and analyzed. In the present chapter the methodology used in the study will be reviewed briefly, and a summary of the findings will be presented. This will be followed by the conclusions reached from these findings. The recomendations based upon the findings and conclusions of the study will then be set forth.

The Method

The study was exploratory in nature, in that it was an initial attempt to determine the suitability of utilizing audio modular instructional units for the pre-service training of school administrators. The study incorporated a field study technique, utilizing several forms of assessment procedures. The following sections describe: a) the procedures used in the field testing of the units; b) the procedures used for gathering the data relating to the participants' attitude

toward the two audio modular instructional units used in this study; and c) the procedures used to gather the data relating to the six criteria used to determine the suitability of the audio modular instructional approach.

Procedures Used in the Field Testing

The study population for the present study consisted of three separate groups chosen from the graduate students in the Center for Leadership and Administration at the School of Education, University of Massachusetts. The first group, "Group A", consisted of twenty-two persons, who individually or in small groups of two or four, participated in both of the audio modular instructional units. The second group, "Group B", consisted of twenty-two persons. This group received the same information given to "Group A", the only variation being that "Group B" was presented the information in lecture-form, through "live" presentations conducted by Dr. Ken Blanchard. The third group, "Group C", consisted of twenty-two persons who did not participate in either the audio modular instructional units or the "live" presentations of the material. The members of this group had never encountered the information which was presented in the audio modular instructional units.

The Procedures Used for Gathering the Data Relating to the Participants' Attitude Toward the Two Audio Modular Instructional Units Used in This Study

The assessment procedure used in this part of the study was based on the student responses to: 1) two open-ended questions designed to gather data concerning the strengths and weaknesses of the two modules used in this study; 2) a closed question designed to measure technical aspects of the modules; and 3) five open-ended statements soliciting responses to various features of the two modules used in the study. A summary of each section follows.

The assessment procedures used to determine the participants' perception of the major strengths and weaknesses of the two modular units. Each participant in "Group A" was asked to respond to two open-ended questions which were included in the 28-item questionnaire administered to the individuals who participated in the two audio modular instructional units. The purpose of these questions was to determine the major strengths and weaknesses of each specific audio modular instructional unit.

The assessment procedure used to determine the participants' perception of the technical aspects of the two units. In the questionnaire, a single "closed" question was incorporated to obtain reactions to participants' perceptions of the technical aspects of the modular in-

structional units. The "closed" question incorporated seven parts, each soliciting a "ranked-order" response from one to five. A rating of one was considered "outstanding", while five was "very poor". The results of the data obtained from the "closed" question would assist the investigator in determining the participants' attitude toward the audio modular approach as used in this study. The responses to the seven technical aspects were presented in terms of the number and percent of response for that particular item.

The assessment procedures used to obtain the data focused on the possible changes which could be made in the two modular units used in this study. In order to determine the possible changes that could be made in the two modular units, five open-ended statements were used. Three of these statements were used in an attempt to solicit participant reactions to the discussion questions, the exercises, and the diagrams that were used throughout the audio modular instructional units. An additional two open-ended statements were incorporated in this section which solicited the participants' response to one major weakness and one strength that could be identified in the audio modular units just completed.

Discussion questions were used throughout the two audio modular instructional units for the purpose of identification or creating a dialogue. These questions were the items that the participant was en-

couraged to "rate" under the open-ended statement referring to the discussion questions used in the unit.

Throughout the two modular units the participants were constantly engaged in some type of exercise. These exercises ranged from completing a form aimed at the identification of one's leadership style to participation in a simulation game designed to test one's leadership skills. It was these exercises that the participant was to determine their worth with respect to the modular approach.

Both audio modular units incorporated the use of diagrams to further clarify new ideas and concepts that were being introduced by the tape presentation. As the participant was listening to the tape presentation, he was required to view a diagram that further clarified the topic in point.

To solicit further responses to possible changes that could be made in the instructional modules, the participant was asked to identify one item within the unit that should be altered, and one that should not be altered. The purpose of the final two open-ended statements was to solicit those remarks identifying further strengths and weaknesses.

The seven open and closed questions or statements identified in this section were directed to the two audio modular units used in this study and were aimed at identifying the participants' attitude toward

these units as they were used in this study.

Assessment Procedures Used to Determine the Suitability of the Units

The assessment procedures used in this part of the study were based on the criteria established in the definition for suitability, as this term was used operationally in the present study. These criteria, and the assessment procedures used for each criterion, are summarized in the following sections.

The assessment procedures used to determine the participants' interest in the experience, and their motivation as a result of the experience. Each of the participants in "Group A" was asked to react to a series of "closed" questions focused on his attitude toward the audio modular instructional units in which they had participated. These questions were presented on a written questionnaire, and were administered to the participant immediately upon completion of the units. In addition to the "closed" questions, the participants were asked to react to a number of "open-ended" questions focused on their attitudes toward their experience with the units. The purpose for the "open-ended" questions was to supplement the data provided through the use of the "closed" questions. The data from the "closed" questions were presented in the form of number and percentage of re-

sponses made for each level of the Likert-Type response pattern. The "open-ended" questions were categorized, and presented in the form of the number and percentage of responses made for each category.

The assessment procedures used to determine the worth of the experience as compared to alternative experiences, as perceived by the participants. The participants in "Group A" were asked to rank-order a list of six different pre-service approaches. This rank-ordering process was in relation to the participant's preference as to which instructional approach he would choose to experience. Within this list was included the audio modular instructional approach. The data produced were analyzed in two different ways. The first was to determine the number of times each approach was assigned a certain rank value. The second approach was to weigh the responses, and determine the weighted mean score for each pre-service approach listed.

The assessment procedures used to determine the connotative meaning of the experience, as compared to the connotative meaning of a concept which signifies any other type of experience by which the participant could achieve the same learning objective. The participants in "Group A" were asked to react to two Semantic Differential Scales. On the first Scale, the participants reacted to the concept,

"Audio Modular Instruction as One Alternative Approach to Pre-service Education for School Administrators." On the second Scale, the participant reacted to the concept, "Pre-service Educational Programs for Administrators in which You have Participated (excluding the audio modular instructional approach, but including course work and other learning experiences)." The mean polarity scores, for each of the two concepts, were determined for the factors of evaluation, potency, and activity. The mean polarity scores for a number of individual polar traits were also calculated. The difference in the mean polarity scores for the two concepts were subjected to a statistical analysis of variance to determine if the differences in these scores reached a statistical level of significance. This statistical analysis was calculated for each of the three factors, and for each of the individual polar traits for which mean polarity scores were determined.

The assessment procedures used to determine the cognitive changes that took place in the individuals as a result of participating in the experience. The posttest-only nonequivalent control group quasi-experimental design was used in an attempt to determine the cognitive changes which may have occurred as a result of participating in the audio modular instructional units. An achievement test, based on the performance objectives for the two units, was constructed

during the study. All the members in "Group A," "Group B," and "Group C" were administered copies of the same achievement test. The mean score for each group was calculated separately. The difference in the mean scores among the three groups was subjected to a statistical analysis of variance to determine if the difference in the mean scores reached a statistical level of significance.

The assessment procedures used to determine the potential for further development of learning experiences utilizing the same instructional approach. The participants in "Group A" were asked to react to a number of "open-ended" questions presented on a written questionnaire. These questions focused on: a) the participants' desire to participate in any additional audio modular instructional units; b) the conditions under which they would participate in additional units; c) the value of developing any more audio modular instructional units; d) the topics which could be adapted for presentation through the use of the audio modular instructional approach; and e) the types of skills which could be learned through the use of the audio modular instructional approach. The data from these questions were categorized, and presented in the form of the number and percentage of responses made for each category.

The procedures used for determining the expenditure of time and money used in the development and production of the learning exper-

ience. In an attempt to attach a cost factor to each module that was produced, this investigator kept an account of the "dollar cost" for the production of each module. The cost factor for each module was based on a per unit cost of producing ten copies of each of two audio modular instructional units. The factor of "time spent" in the development and production of the audio modular instructional units will be somewhat less accurate. The investigator can produce only a close estimate of the time element since over-lapping agendas often distracted many attempts to monitor the time factor.

The Summary

In the previous section the method for generating the participants' responses was outlined and summarized according to the procedures used. In the present section a summary of the findings is presented according to two major subsections, namely: 1) the results from the data relating to the participants' attitude toward the two audio modular instructional units used in the study; and 2) the results from the data relating to the six criteria used for determining the suitability of the audio modular instructional approach.

A Summary of the Results from the Data Relating to the Participants' Attitude Toward the Two Audio Modular Instructional Units Used in the Study

In this section an analysis was made of the participants' attitude toward the two audio modular instructional units used in this study. Three questions, one "closed" and two "open-ended", were used along with five "open-ended" statements to gather these data.

The results from the data relating to the participants' perception of the major strengths and weaknesses of the two modular units. From the two open-ended questions soliciting strengths and weaknesses of the two audio modular units, it was apparent that the participants were unable to agree upon a single major strength within the two audio modular units used for this study. From the 45 responses generating thirteen strengths, only 15.6 percent of the study population was able to support a given strength. Forty percent of the responses are found in the first three responses. Those responses are: 1) opportunity to examine one's own leadership style; 2) the feeling of being involved; and 3) reinforcement and direct feedback. From the table soliciting the weaknesses, 54.4 percent of the participants felt there were no obvious weaknesses in the two units used in the study.

The results from the data focused on the possible changes which

could be made in the two modular units used in this study. The data relating to the technical aspects of the audio modular instructional units was much more conclusive. More than 59 percent of the participants ranked the seven technical aspects as "outstanding". An additional check of the data showed that more than 90 percent of all participants had the seven technical aspects ranked above average. These data tend to indicate that the audio modular instructional units were technically well accepted by the participants.

The results from the data focused on the possible changes which could be made in the two modular units used in this study. From the open-ended statement soliciting reaction toward the discussion questions, more than three-fourths of the participants were strongly supportive of the way these questions were used in the context of the modular units. With reference to the exercises used in the study, again, more than three-fourths of the participants felt they were both interesting and worthwhile. The diagrams were met with somewhat less enthusiasm, but were still supported by more than 60 percent of the participants, who felt they were helpful.

The final two open-ended statements used in this section were designed to elicit participant reaction in terms of "variation and improvement" and unalterable strengths. From the statement which asked the participant to identify the one item that should remain the same, seven

areas were identified. Of these seven areas, approximately one-third of the participants felt that the strength of the audio modular instructional units used in the study was in the simulation game. Another one-third of the participants felt that both of the modular units used must remain unchanged. The remaining one-third of the responses were distributed over the final five areas.

Data analyzed from the possible changes that could be made show that one-third of the participants felt there were none. There were ten additional suggestions made, none of which received more than two responses in any one area.

A Summary of the Results from the Data Relating to the Six Criteria Used to Determine the Suitability of the Audio Modular Instructional Approach

In the previous section the results from the data relating to the participants' attitude toward the two units which were used in the study were summarized. This section presents a summary of the results from the data relating to the six criteria used to determine the suitability of the audio modular instructional approach.

The results from the data used to determine the participants' interest in the experience, and their motivation as a result of the experience. An analysis of the data generated by the five "closed" questions

used to determine participant interest and motivation, indicated that more than 63 percent of the participants gave the highest possible rating for each one of the five questions. More than 90 percent of the participants provided positive ratings on all five of the questions, while no more than one participant gave a negative response for any one of the five questions.

The results from the data used to determine the worth of the experience as compared to alternative experiences, as perceived by the participants. This section contains two parts: 1) the participants' choice of alternative instructional approaches, as opposed to the two audio modular instructional units; and 2) the participants' order of preference of alternative instructional approaches, as compared to the audio modular instructional approach.

The data relating to the first subsection indicated that the majority of participants (61.1 percent) felt that, as a result of their experience with the two units, they had gained some knowledge with reference to their own style of leadership as well as a greater understanding of the "Life Cycle Theory." By using their perception of what they had learned from the units, each participant was asked to state any other existing instructional method he would have preferred in order to gain the knowledge contained in the two modular units. The data from these responses indicated that less than one-third of the

participants volunteered other specific alternative instructional approaches, while slightly less than sixty percent of the responses felt participation in the audio modular instructional units was the best approach for gaining the knowledge and skills which the participant perceived he had gained from the units.

An attempt was made to move beyond a specific reference to the two audio modular instructional units, and to move toward a broader reference, that of the audio modular instructional approach as a more general concept. To do this, the participant was asked to rank-order a list of six pre-service instructional approaches, including the audio modular instructional approach. The data resulting from the rank-ordering process indicate that more than three-fourths of the participants ranked the audio modular instructional approach as either first or second choice, while none of the participants ranked it as fifth or sixth. For each approach, these rank-order scores were weighted and the means of these weighted scores were determined. The data resulting from these procedures indicated that, of a possible score of 5.0, the mean weighted score for the audio modular instructional approach was 4.2. The score for the second highest instructional approach was 2.6, while the score for the lowest ranked instructional approach was 1.4.

The results from the data used to determine the connotative mean-

ing of the experience, as compared to the connotative meaning of a concept which signifies any other type of experience by which the participant could achieve the same learning objectives. In a further attempt to move toward a broader perspective on the audio modular instructional approach as a concept, the participants in "Group A" were asked to react to two semantic differential scales for determining the connotative meaning of the concepts: "Audio modular instruction as one alternative approach for pre-service education for school administrators;" and "Pre-service educational programs for administrators in which you have participated (excluding the audio modular instructional approach, but including course work and other learning experiences)." The response patterns on the semantic differentials included: 1) polar traits relating to the factors of evaluation, potency, and activity; and 2) the polar traits signifying the degree to which the concept is thoughtful, open, promising, useful, meaningful, successful, and interesting.

The analysis of the data from the two semantic differentials reacted to by the members of "Group A" indicated the audio modular instructional approach (as a concept) elicited a statistically significant greater positive reaction than did the concept which signified "other forms of pre-service training" for the factors of evaluation, potency, and activity. The greatest and most significant difference in mean

polarity scores, between the two concepts, related to the factor of activity. The data indicated that the participants' experience with the audio modular instructional approach, as compared with their experience with other instructional approaches is 1) more greatly valued, 2) more potent, and 3) more active.

Of the six individual traits that were compared, the audio modular instructional approach, as compared to other forms of pre-service training for school administrators, elicited greater positive reactions on all the factors and polar traits.

The results from the data relating to the cognitive changes that took place in the individuals as a result of participating in the experience. An attempt was made to measure the degree of cognitive change that takes place in the individual as a result of participating in the experience. To do this measurement, the posttest-only nonequivalent control group quasi-experimental design was used. A not fully validated twenty-eight question multiple choice test was adopted to measure the degree of competency attained by the participating students. The test was administered to all three groups; the two experimental groups following their experience with the material and the method of presentation, and the control group prior to any knowledge of the material used in the study.

An analysis of the data revealed the student knowing absolutely

nothing about "Life Cycle Theory" as it pertains to leadership, could expect to attain slightly more than 24 percent accuracy on the competency examination.

A comparison of the test results between the two experimental groups showed that those individuals who participated in the audio modular instructional units attained an 8.6 percent average higher test score than did those individuals participating in the classroom presentation.

The results from the data used to determine the potential for further development of learning experiences utilizing the same instructional approach. In this section, seven open-ended statements or questions were used in an attempt to obtain the students' attitude toward further development of audio modular instructional units. The first two statements solicited major strengths and weaknesses of the audio modular approach. The strengths that were identified by the 22 participants related to such items as: individualization, ease of use, concise and informative, and work at own pace. These four areas represented approximately 60 percent of the responses made in this category. Of the eighteen participants responding to the weaknesses statement, twelve (66.6 percent) of the participants felt there were no apparent weaknesses in the audio modular instructional approach to learning.

To further solicit participant reaction to the audio modular approach to learning, an open-ended statement was used whereby the participant completed the partial statement which referred to the conditions that must be met if the participant is to participate in additional modules. A second statement using the same concept with a different approach solicited from the participant his reaction to the open-ended statement: "I would participate in additional audio modular units only if...." From these two statements better than 60 percent of the participants indicated that they would be interested in participating in additional modules if the modules met their needs.

Two additional questions were used soliciting the skills and topics that could be introduced through the audio modular approach to learning. From the skills table, 72 suggestions were recorded covering fourteen areas. From the topics table, fourteen participants generated 43 responses in 11 categories.

The final open-ended statement was directed at the deep concerns for the audio modular approach to learning as perceived by the participants. The statement used to solicit these data read: "For one to develop any more audio modular instructional units would...." An analysis of these data indicated that 73 percent of the responses fell into one of three categories: 1) be a good idea; 2) would be a tremendous service to the Center for Leadership and Administration; and

3) would be a great service to me.

After analyzing the data presented from these seven open-ended questions, and comparing these data to the suitability factor reading: "The potential for further development of learning experiences utilizing the same instructional approach;" the investigator concludes that the audio modular approach to learning has been strongly supported by those who have experienced this learning process from the study.

The results from the data relating to the expenditure of time and money used in the development and production of the learning experiences. An attempt was made to calculate the amount of time and expense that is involved in the development of the audio modular instructional units. The total man hours involved in the development of each of the two audio modular units used in this study approached the 100 hour figure. The cost of the materials was minimal since this figure averaged between 15 and 18 dollars per unit, and the units were planned in such a way that they could be used over and over again.

Conclusions

From the analysis and summary of the findings, a general conclusion must be made; that is no conclusion can be reached as to the suit-

ability of utilizing the audio modular instructional approach as one alternative pre-service training technique for school administrators. The answers to four major questions could not be determined from an analysis of the findings from the study. Before a conclusion can be reached as to the suitability of the audio modular instructional approach, these answers must be determined. The four major questions are:

1. What are the behavioral changes, in the cognitive domain, which take place in the individuals as a result of participating in the audio modular instructional unit?

2. What are the behavioral changes, in the affective domain, which take place in the individuals as a result of participating in the audio modular instructional unit?

3. If the participants had an actual choice among various available alternative instructional approaches, would they choose an audio modular instructional unit in preference to the other approaches?

4. If provided the technical assistance, would professors of educational administration take the time necessary to cooperate in the development of audio modular instructional units? What are the conditions under which this cooperation would take place?

Some minor conclusions were reached from a summary of the findings. These conclusions fall under two categories: 1) the conclusions relating to the two units used in the study; and 2) the conclusions relating to the audio modular instructional approach.

Conclusions Relating to the Two Units Used in the Study

1. The two audio modular instructional units provided an experience for the participants which was perceived of as being: a) interesting and exciting; b) a valuable learning experience; c) an experience worth recommending to others; and d) the best method to use for gaining that which the participants felt they had learned from the two units.

2. The perceived major strengths of the two audio modular instructional units were: a) they provided an opportunity for the participants to explore and determine their own leadership style; and 2) they provided for the active involvement of the participants in the learning experience.

3. The major identified weakness of the two audio modular instructional units was that they did not provide for the personal interaction between the participants and the instructor or facilitator.

Conclusions Relating to the Audio Modular Instructional Approach

1. The audio modular instructional approach takes preference over other, more traditional instructional approaches for the training of school administrators, as indicated by the attitudes of the participants.

2. The audio modular instructional approach is perceived of as being a more active and more promising experience than other pre-service instructional approaches in which the individuals have participated.

3. The perceived major strengths of the audio modular instructional approach are: a) the ease and convenience with which the material can be used; and b) the provision for the active involvement of the participants.

4. The major weakness of the audio modular instructional approach is the lack of provision for teacher-student identity.

5. The skills most often mentioned which could be gained through the audio modular instructional approach are communication skills, skills in self-analysis, and skills in decision-making.

6. The participants felt that it would be beneficial for someone to develop additional audio modular instructional units.

Recommendations

The recommendations based upon the findings and conclusions of the study will be presented in two sections: 1) those that are pertinent to the further development and use of the audio modular instructional units; and 2) those that are pertinent to further studies relating to the audio modular instructional approach.

Recommendations for the Further Development and Use of the Audio Modular Instructional Units

1. Further audio modular instructional units should be developed and field tested. These units should incorporate basically the same approach as that used in the two units developed for this study. The following criteria should be utilized:

a. Each unit should not require the participant to take over one and one-half hours to complete. The length of time to complete the unit should be from one hour to one and one-half hours.

b. The units should be constructed so that they provide for the active involvement and interaction of the participants experiencing the unit together.

c. Proper feedback procedures should be included throughout the unit so that the participants are able to test their perceptions against the perceptions and knowledge of the person who developed the unit. Care must be taken to avoid too much redundancy, or the feeding back of obvious answers.

d. Care should be exercised to maintain a high level of technical quality for the audio tapes and a high degree of attractiveness and readability for the pages in the Guidebook.

e. Tear-out materials should be provided for the participants to keep. The purpose for these materials is to assist the participant to recall the objectives which the unit presented.

2. Units should be developed utilizing a greater variety of audio visual materials. Care must be exercised so the materials do not

require too much equipment. The ease and convenience of using the materials is one of the major strengths of the audio modular instructional approach, and must be maintained.

3. More faculty members from the Center for Leadership and Administration should become involved in the development and use of the audio modular instructional units. The CLA should provide technical assistance for the faculty members through the use of graduate students. These graduate students should first receive training in the development of the audio modular instructional units.

4. The two audio modular instructional units which were developed for this study should be revised, taking into account the suggestions made from the participants who experienced the units in this study. Additional units should be developed which build upon the knowledge which was gained from these two initial units. These additional units should provide for a greater emphasis on objectives relating to the modification of the behavior of the participants.

Recommendations for Further Studies Relating to the Audio Modular Instructional Approach

1. Instruments should be constructed and tested for validity and reliability. Appropriate research designs should be identified so that they can be incorporated to determine the cognitive and attitudinal

changes that take place as a result of participating in an audio modular instructional unit.

2. An assessment approach should be identified to determine whether the graduate students would aggressively seek the use of the audio modular instructional units from the resource bank. This assessment approach should incorporate a less structured means of dissemination of the units than was used in the present study. For example, three or four units should be developed by different faculty members in the Center for Leadership and Administration. Copies of these units would then be placed in the resource bank for the CLA, and the faculty members would make reference to them in their classes. Records would be kept on the use of the units, and the students would be given posttest instruments to react to at the time they returned the units to the resource bank. These procedures should be implemented over a period of approximately six months.

3. An assessment approach should be identified for determining the observable behavioral changes exhibited by the individual as a result of participating in the audio modular instructional units. Such an assessment approach is especially necessary for the units which are focused on behavioral modification goals. The "Assessment Center" approach which has been developed by Cabot L. Jaffee[1] appears to

[1]Cabot L. Jaffee, Effective Management Selection: The Analysis

hold some promise as a possible assessment procedure to be used for determining these observable behavioral changes.

4. Due to the large amount of data that is necessary to determine the suitability of alternative training techniques, more convenient ways should be identified for using the posttest-only control group design. This type of design is necessary if the investigator wishes to eliminate the pre-testing of his groups. The Solomon four-group design does not appear to be the complete solution because of the amount of data needed for the assessment. The participant finds himself spending as much, if not more, time completing the assessment instruments as he does completing the learning experience. In relation to this need for better control group designs is the problem of matching the experimental and control groups. The matching process that was used in this study in an attempt to get three equivalent groups was somewhat overwhelming. Studies should be conducted to determine the differences that exist among a variety of nonequivalent groups, as measured by the cognitive and attitudinal instruments used for assessing the training techniques. The valid and efficient use of control groups is going to depend on some base-line knowledge of what differences can be expected to exist among a variety of rather small non-

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of Behavior by Simulation, (Reading, Massachusetts: Addison-Wesley Publishing Co., 1971).

equivalent groups.

5. In general the assessment procedures and instruments for this study, used to collect the subjective responses, appear to be beneficial. This is true for the researcher who accepts the criteria for suitability as set forth in this study. Some changes should be made in these subjective sections of the assessment instruments, in order to make them stronger. These changes are:

a) The semantic differential scale could be improved by developing a better balance of polar traits relating to the factors of evaluation, potency, and activity. The new scale should have five polar traits relating to each of the three factors. Also, five polar traits relating to the factor of receptivity should be added to the new scale.

b) The participants' responses to the open-ended questions from this study should be used to develop additional "closed" questions. These questions should utilize the Likert five-scale response pattern.

c) A more comprehensive list of alternative pre-service instructional techniques should be developed for the question soliciting a rank-ordering of the various instructional approaches. This new list should include a number of references to the more innovative instructional approaches, such as role playing, sensitive sessions, simulation workshops, and assessment center approaches.

APPENDIX A

INSTRUMENTS USED IN THE STUDY

AUDIO MODULAR INSTRUCTION QUESTIONNAIRE
BIOGRAPHICAL DATA

Date: _____

Name: _____

Address: _____
Street City State

Date of Birth: _____ _____ Sex: Female____ Male____
Month Year

Present Position		Prior Position	Degree Held at Present Time	
Elementary Teacher	____	____	Bachelors	____
Secondary Teacher	____	____	Bachelors +	____
Elementary Asst. Principal	____	____	Masters	____
Secondary Asst. Principal	____	____	Masters +	____
Elementary Principal	____	____	Specialist	____
Secondary Principal	____	____	Doctorate	____
Graduate Student (full-time)	____	____		
Undergraduate Student	____	____		
Other (explain) _____				

Type of school in which You are presently, or were last, employed

Elementary _____
Jr. High _____
Sr. High _____
(Check any combination which applies)

School Enrollment

000-200 ____ 801-1000 ____
201-400 ____ 1001-1200 ____
401-600 ____ 1201 up ____

School setting: Urban____ Suburban____ Rural____
Student socioeconomic background: Upper____ Middle____ Lower____
Any further description of the school: _____

Number of years you have had as a classroom teacher _____
Have you ever held an administrative position: Yes____ No____
If yes: (1) What was your last administrative position _____
(2) How many years in last administrative position _____
(3) How many total years in administration _____

PHASE I

Part I

Opinionaire for the audio modular instructional unit.

1. I found participating in the audio instructional module:

_____a) very interesting.

_____b) somewhat interesting.

_____c) somewhat boring.

_____d) very boring.

2. I found participating in the audio instructional module:

_____a) a very valuable learning experience.

_____b) a learning experience of some value.

_____c) an experience which is neither valuable nor worthless as far as my own learning.

_____d) an experience somewhat worthless.

_____e) an experience which was completely worthless.

3. What was the major strength of this specific audio instructional module?

4. What was the major weakness of this specific audio instructional module?

5. Which of the following responses represents the total time you spent participating in the module?

_____a) 30 - 45 minutes.

_____b) 45 - 60 minutes.

_____c) 60 - 75 minutes.

_____d) 75 - 90 minutes.

_____e) 90 - 105 minutes.

_____f) 105 - 120 minutes.

_____g) over 2 hours.

_____h) over 2 1/2 hours.

6. I feel that the experience I gained from participating in this module

_____a) was definitely worth this amount of time.

_____b) was probably worth this amount of time.

_____c) may or may not have been worth the time.

_____d) was probably <u>not</u> worth this amount of time.

_____e) was definitely <u>not</u> worth this amount of time.

7. If it was discovered that this module was too time consuming, and you were involved in revising it, what portion would you definitely keep in the module?

What portion would you remove?

8. Now that I know what the module is like, if I had the choice I would

_____a) have definitely participated in the module.

_____b) have probably participated in the module.

_____c) not know whether I would or would not have participated in the module.

_____d) have probably not participated in the module.

_____e) have definitely not participated in the module.

9. How excited would you be in recommending to a fellow student that he/she participate in this module?

_____a) very excited.

_____b) somewhat excited.

_____c) no feeling either way.

_____d) would be reluctant to recommend it.

_____e) definitely would not recommend it.

10. Briefly state what you feel you have learned from this module.

What other existing instructional method would you have preferred to participate in, in order to learn this?

11. The following items focus on the technical aspects of the audio instructional module. Please circle the number at the right of the statement which best represents your evaluation of the particular aspect mentioned in the statement. Use the following scale:

    1. Outstanding
    2. Good
    3. Average
    4. Needs improvement
    5. Very poor

a) The general appearance of the module 1 2 3 4 5

b) The clarity of the module instructions 1 2 3 4 5

c) The statement of objectives 1 2 3 4 5

d) The appearance of the pages in the text 1 2 3 4 5

e) The quality of the casette tape 1 2 3 4 5

f) The synchronization between tape and text 1 2 3 4 5

g) The ease and convenience with which the material can be utilized 1 2 3 4 5

12. Complete the following statements:

a) The discussion questions in this module_____

_____

b) The exercises, connected to the module, which I participated in_____

c) The diagrams in this module_____

_____

d) One change that I would make in this module_____

_____

e) One aspect of this module which should definitely remain the same_____

Part II

Opinionaire for the audio modular instructional approach

Directions: When completing the multiple choice questions, place a check-mark on the line next to the statement that most appropriately answers the question or completes the sentence. When answering the open-ended questions, write your answer in very brief form.

13. If you had the opportunity, would you participate in additional modules?

_____a) Yes, definitely

_____b) Yes, probably

_____c) I don't know

_____d) Probably not

_____e) Definitely not

14. Suppose you were given the option to participate in the following pre-service educational programs. Assuming they would be somewhat equal in time commitment, rank the following approaches in the order of your preference. Start with the number (1) for your highest preference; number (2) as second, and so on.

_____a) attend a seminar where the material is presented in lecture form.

_____b) participate in a course where the material in question is presented sometime within the context of the course.

_____c) purchase a professional book and read it.

_____d) visit schools to observe leaders in action.

_____e) participate in an audio modular instructional unit.

_____f) discover the material through independent study.

(Below, add any additional pre-service educational program approaches you might choose as one alternative approach to concept learning)

_____g) _____

_____h) _____

15. The major strengths of the audio modular instructional approach as a pre-service technique are:

16. The major weaknesses of the audio modular instructional approach as a pre-service technique are:

17. Please complete the following statements:

a) I would spend time participating in an audio modular instructional unit only if _____

_____

b) I would definitely not spend time participating in an audio instructional unit if _____

_____

c) For any one to develop any more audio modular instructional units would _____

_____

18. What kind of skills and knowledge do you think could be learned through the use of audio modular instruction?

19. What additional topics might be adopted to audio modular instruction?

20. Any additional comments.

PHASE II
FIRST SEMANTIC DIFFERENTIAL
INSTRUCTIONS

Part I

The purpose of this study is to measure the meaning of certain things to various people by having them judge them against a series of descriptive scales. In completing this scale, please make your judgments on the basis of what these things mean to you. You will find two concepts to be judged and beneath them a set of scales. You are to rate the concept on each of these scales in order.

Here is how you are to use these scales: If you feel that the concept at the top of the page is very closely related to one end of the scale, you should place your mark as follows:

Fair	:X:	:__:	:__:	:__:	:__:	:__:	:__:	Unfair
Fair	:__:	:__:	:__:	:__:	:__:	:__:	:X:	Unfair

If you feel that the concept is quite closely related to one end of the scale or the other (but not extremely), you should place your check-mark as follows:

Fast	:__:	:X:	:__:	:__:	:__:	:__:	:__:	Slow
Fast	:__:	:__:	:__:	:__:	:__:	:X:	:__:	Slow

If the concept seems only slightly related to one side as opposed to the other side (but is not really neutral), then you should place your check-mark as follows:

Light	:__:	:__:	:X:	:__:	:__:	:__:	:__:	Dark
Light	:__:	:__:	:__:	:__:	:X:	:__:	:__:	Dark

The direction toward which you check, or course, depends upon which of the two ends of the scale seem most characteristic of the thing which you are judging. If you consider the concept to be neutral on the scale, both sides of the scale equally associated with the concept, or if the scale is completely irrelevant, and unrelated to the concept, then you should place your check-mark in the middle space.

Little	:__:	:__:	:__:	:X:	:__:	:__:	:__:	Big

BE SURE TO CHECK EVERY SCALE FOR EVERY CONCEPT—DO NOT OMIT ANY.

For the following concept, place an X between the :__: near the word which most nearly represents your feeling about the concept. The closer you place the X to a word, the more the word represents your feeling.

AUDIO MODULAR INSTRUCTION AS ONE ALTERNATIVE APPROACH FOR PRE-SERVICE EDUCATION FOR SCHOOL ADMINISTRATORS
(CONCEPT)

Good	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Bad
Potent	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Impotent
Pessimistic	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Optimistic
Incomplete	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Complete
Unsuccessful	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Successful
Meaningless	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Meaningful
Passive	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Active
Useful	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Useless
Untimely	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Timely
Pleasant	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Unpleasant
Comfortable	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Uncomfortable
Promising	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Disappointing
Free	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Constraining
Forward	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Backward
Complex	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Simple
Negative	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Positive
New	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Old
Closed	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Open
Thoughtful	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Thoughtless
Uninteresting	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Interesting
Prohibitive	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Permissive

Part III

For the following concept, place an X between the :__: near the word which most nearly represents your feeling about the concept. The closer you place the X to a word, the more the word will represent your feeling.

PRE-SERVICE EDUCATIONAL PROGRAMS FOR ADMINISTRATORS IN WHICH YOU HAVE PARTICIPATED (EXCLUDING THE AUDIO MODULAR INSTRUCTIONAL APPROACH, BUT INCLUDING COURSE WORK AND OTHER LEARNING EXPERIENCES)
(CONCEPT)

Good	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Bad
Potent	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Impotent
Pessimistic	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Optimistic
Incomplete	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Complete
Unsuccessful	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Successful
Meaningless	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Meaningful
Passive	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Active
Useful	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Useless
Untimely	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Timely
Pleasant	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Unpleasant
Comfortable	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Uncomfortable
Promising	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Disappointing
Free	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Constraining
Forward	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Backward
Complex	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Simple
Negative	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Positive
New	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Old
Closed	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Open
Thoughtful	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Thoughtless
Uninteresting	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Interesting
Prohibitive	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Permissive

Part II

Achievement Test for the audio modular instructional unit, "Leader Behavior."

DIRECTIONS:

When completing the multiple choice questions, place a check-mark on the line next to the statement that most appropriately answers the question or completes the sentence. Select the one best answer, even though others may not be wrong. CHOOSE ONLY ONE.

1. The Managerial Grid implies that the most desirable leader behavior is

_____a) relationship-oriented

_____b) team management

_____c) high task and low relationship

_____d) b and c

_____e) none of the above

2. Increased participation in decision-making

_____a) will always have a positive influence on workers

_____b) tends to be effective in our society

_____c) is not always effective as a management practice

_____d) all of the above

_____e) a and b

3. A leader might be effective in a given situation

_____a) if he is high on relationship behavior

_____b) if he is high on both task and relationship behavior

_____c) if he is low on both task and relationship behavior

_____d) all of the above

_____e) none of the above

4. The "best" style of leader behavior is

_____a) high task and high relationship

_____b) high relationship

_____c) high task

_____d) low task and low relationship

_____e) none of the above

5. McGregor's Theory X assumes that

_____a) work is as natural as play, if conditions are right

_____b) man is basically lazy and needs constant motivation

_____c) man is basically self-motivated

_____d) self control is often indispensable in achieving organizational goals

_____e) none of the above

6. Leadership behavior which integrates the need of the organization and the needs of the individual

_____a) is the most effective leader behavior style

_____b) may be the most effective leader style if it fits the personality of the leader

_____c) may be effective in some situations

_____d) is the most effective style when used in our culture

_____e) none of the above

7. The effectiveness of a basic leader behavior style depends on

_____a) the situation in which it is used

_____b) the leader's success in getting followers to accomplish a given task

_____c) the appropriateness of this style to the situation

_____d) net profits obtained for the company

_____e) the extent to which the leader satisfies the requirements and objectives of his position

8. The four effective and the four ineffective leader behavior styles are in essence

_____a) a measure of a leader's performance

_____b) the intervening variables which reflect the current conditions of the internal state of the organization

_____c) measured by production or output

_____d) how appropriate a leader's basic style is to a given situation as seen by his followers, supervisors and associates

_____e) how they are perceived by superiors

9. A leader with a wide range of behavioral style (adaptability)

_____a) is an effective leader

_____b) to be effective must diagnose the needs of the situation

_____c) to be effective must be able to change his style

_____d) to be effective must be able to adapt his behavioral style to the needs of the situation

_____e) may be an ineffective leader

10. Leaders whose behavior is observed to be at the authoritarian end of the continuum tend to be

_____a) high task-high consideration oriented

_____b) group-oriented

_____c) task-oriented

_____d) laissez-faire oriented

_____e) none of the above

11. Of the five categories listed on the Managerial Grid, which one of the following does not belong

_____a) country club

_____b) team

_____c) self-initiated

_____d) impoverished

_____e) middle of the road

12. The Tri-Dimensional Leader Effective Model adds the following dimension to the Ohio State Model

_____a) effectiveness

_____b) task

_____c) relationship

_____d) behavior

_____e) none of the above

13. A leader's behavioral style is

_____a) the way the leader behaves in a leadership situation

_____b) the way others perceive the leader's behavior in a leadership situation

_____c) the effectiveness the leader attains in accomplishing organizational goals

_____d) the ability of the leader to reconcile organization and personal goals

_____e) the ability of the leader to reconcile followers goals and organization goals

14. The Tri-Dimensional Leader Effectiveness Model is concerned with

_____a) the degree of production obtained within an organization

_____b) the degree that the needs of people, as measured against production are actually met

_____c) how people accomplish organization purpose through hierarchy

_____d) distinguishing, in a given situation, how much production is obtained on the one hand, and how much consideration is given to people on the other hand

_____e) the way in which authority is used to control people within an organization

15. Diagnosing a leadership situation to determine the appropriateness of the behavioral style involves

_____a) the behavioral expectations of superiors, associates and followers

_____b) knowing the range of organization behavior expectations

_____c) the over-lapping personality and expectations of all important situational elements in the environment

_____d) the behavioral styles of supervisors, associates and followers

_____e) knowing job requirements

Achievement Test related to the audio modular instructional unit, "Leader Style Adaptability."

DIRECTIONS:

When completing the multiple choice questions, place a check-mark on the line next to the statement that most appropriately answers the question or completes the sentence. Select the one best answer, even though others may not be wrong. CHOOSE ONLY ONE.

1. A successful leader is one who can:

_____a) Adapt his leader behavior to meet the demands of the environment.

_____b) Successfully manipulate the environment to match the style of the leader.

_____c) Have the power to "friendly persuade" and convince others of his solution.

_____d) Solicit group participation in decision-making.

_____e) a and b

2. A so-called "best" style of leadership depends on the:

_____a) leader

_____b) subordinates

_____c) superordinates

_____d) situation

_____e) all of the above

3. The single most important factor when dealing with people through the "Life Cycle Theory" is:

_____a) high Consideration

_____b) high Structure-high Consideration

_____c) level of maturity

_____d) low Structure-high Consideration

_____e) low Structure-low Consideration

4. The most crucial factor in any leadership event is the:

_____a) leader

_____b) followers

_____c) superordinates

_____d) b and c

_____e) all of the above

5. Achievement-motivated people are:

_____a) more theory X than theory Y oriented.

_____b) want to be involved in setting own goals.

_____c) are considered low-task personnel.

_____d) people who demonstrate a great deal of immaturity.

_____e) c and d

6. "task-relevant" education and experience

_____a) is a measure of how well you like the job you are now doing.

_____b) is a measure of educational background.

_____c) is a measure of "job knowledge". (how much you know about a particular job)

_____d) the relevancy of past experience of a person to a particular job he is asked to do.

_____e) none of the above

7. According to "Life Cycle Theory" a new born baby should experience the following leadership behavior from his parents.

_____a) high Structure-high Consideration

_____b) high Consideration-low Structure

_____c) high Structure-low Consideration

_____d) low Structure-low Consideration

_____e) depends on the situation

8. What "Life Cycle Theory" is suggesting to us is:

_____a) a means of determining maturity.

_____b) a means of determining one's leader style.

_____c) a basic style of leadership for different levels of maturity.

_____d) a "best" leadership style.

_____e) b and d

9. As the appropriate leadership style for a given person moves through the four quadrants of the Ohio State Leadership Model, starting with quadrant I and ending in quadrant IV, it is safe to assume:

_____a) his maturity level has decreased.

_____b) his maturity level has increased.

_____c) his maturity level has remained about the same.

_____d) the maturity level cannot be measured.

_____e) the maturity level should not be considered as a factor.

10. When working with mature, self-motivated people, which of the following leadership styles might be appropriate?

_____a) high Consideration-low Structure.

_____b) high Consideration-high Structure.

_____c) high Structure-low Consideration.

_____d) low Structure-low Consideration.

_____e) the style with which the leader is most comfortable.

11. Productivity and group relations are good. You feel somewhat unsure about your lack of direction and involvement with the group. Theoretically, the best action a leader can initiate for this group is:

_____a) Involve subordinates; respect their ideas.

_____b) Examine results, reset standards.

_____c) Intentionally do not intervene.

_____d) Be willing to make changes as recommended, but maintain performance objectives.

12. You stepped into a smoothly running situation. The last administrator ran a tight ship. You want to maintain a productive situation, but would like to begin humanizing the environment. Theoretically, the best action a leader can initiate for this group is:

_____a) Involve subordinates; respect their ideas.

_____b) Examine results, reset standards.

_____c) Intentionally do not intervene.

_____d) Be willing to make changes as recommended, but maintain performance objectives.

13. Your followers are not responding lately to your friendly conversations and obviously are not reacting to your concern for their welfare. Productivity is in a tailspin. Theoretically, the best action a leader can initiate for this group is:

_____a) Involve subordinates; respect their ideas.

_____b) Examine results, reset standards.

_____c) Intentionally do not intervene.

_____d) Be willing to make changes as recommended, but maintain performance objectives.

For the following concept, place an X between the :__: near the word which most nearly represents your feeling about the concept. The closer you place the X to the word, the more the word represents your feeling.

PARTICIPANTS ATTITUDE TOWARD
CLASS PRESENTATION ON
FUNDAMENTAL ASPECTS OF
"LEADER STYLE ADAPTABILITY"
(CONCEPT)

Good	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Bad
Potent	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Impotent
Pessimistic	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Optimistic
Incomplete	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Complete
Unsuccessful	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Successful
Meaningless	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Meaningful
Passive	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Active
Useful	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Useless
Untimely	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Timely
Pleasant	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Unpleasant
Comfortable	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Uncomfortable
Promising	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Disappointing
Free	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Constraining
Forward	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Backward
Complex	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Simple
Negative	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Positive
New	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Old
Closed	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Open
Thoughtful	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Thoughtless
Uninteresting	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Interesting
Prohibitive	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Permissive

For the following concept, place an X between the :__: near the word which most nearly represents your feeling about the concept. The closer you place the X to the word, the more the word represents your feeling.

PARTICIPANTS ATTITUDE TOWARD CLASS PRESENTATION ON FUNDAMENTAL ASPECTS OF "LEADER BEHAVIOR." (CONCEPT)

Good	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Bad
Potent	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Impotent
Pessimistic	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Optimistic
Incomplete	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Complete
Unsuccessful	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Successful
Meaningless	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Meaningful
Passive	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Active
Useful	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Useless
Untimely	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Timely
Pleasant	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Unpleasant
Comfortable	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Uncomfortable
Promising	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Disappointing
Free	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Constraining
Forward	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Backward
Complex	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Simple
Negative	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Positive
New	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Old
Closed	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Open
Thoughtful	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Thoughtless
Uninteresting	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Interesting
Prohibitive	:__:	:__:	:__:	:__:	:__:	:__:	:__:	Permissive

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